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Stuart Andrew Keogh
University of Kentucky, stuart.keogh@gmail.com
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Stuart Andrew Keogh, Student

Dr. John Nash, Major Professor

Dr. John Nash, Director of Graduate Studies

A QUANTCRIT INVESTIGATION OF THE DISCRIMINATORY PRACTICES IN TEXAS EDUCATION FUNDING

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Education
at the University of Kentucky

By

Stuart Andrew Keogh

Lexington, Kentucky

Director: Dr. John Nash, Professor of Educational Leadership Studies

Lexington, Kentucky

2023

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ABSTRACT OF DISSERTATION

A QUANTCRIT INVESTIGATION OF THE DISCRIMINATORY PRACTICES IN TEXAS EDUCATION FUNDING

The Texas constitution guarantees citizens a "general diffusion of knowledge" and an "efficient system of public free schools." However, the state has often failed to provide sufficient funding to meet this constitutional mandate. Many school districts, especially those serving low-income or minority communities, have been chronically underfunded. This has led to unequal access to quality education. As a result, there have been numerous lawsuits challenging the constitutionality of Texas's school funding system. Plaintiffs argue that the state has violated the education clause of the constitution by failing to adequately and equitably fund public schools. Despite several legislative attempts at reform, the issue remains contested, with new lawsuits emerging as plaintiffs contend the funding system still falls short of constitutional requirements.

I use a three-article format to examine an overarching theme of the most recent inequities in school funding in Texas. The first article provides insight into the use of QuantCrit by scholars through a systematic literature review. The second study evaluates the quantitative results of Texas HB 21, passed in response to the most recent lawsuit in Texas to address the complaints of inadequacy and inequity in school funding. The third study evaluates the association of attendance, school funding, and poverty level in Texas school funding. All three studies leverage QuantCrit as a theoretical framework to both guide the development of the methodology and add context to the results.

These three studies collectively help illuminate the impacts of recent Texas school funding legislation on disadvantaged communities. The studies utilize and build upon the QuantCrit framework to provide contextual analysis of how legislative changes affect low-income students and students of color. Their findings reveal ongoing inequities in the Texas education system despite attempted reforms. Together, the studies demonstrate the value of QuantCrit for evaluating education policy while also providing evidence that school funding in Texas still does not adequately or equitably serve all students,

especially those from marginalized backgrounds. The research expands understanding of both QuantCrit and the continued need for progress on equitable school funding in Texas.

KEYWORDS: QuantCrit, School Finance, Education Policy, Linear Regression,

ANOVA

Stuart Andrew Keogh

04/12/2023

Date

A QUANTCRIT INVESTIGATION OF THE DISCRIMINATORY PRACTICES IN TEXAS EDUCATION FUNDING

By

Stuart Andrew Keogh

Dr. John Nash

Director of Dissertation

Dr. John Nash

Director of Graduate Studies

04/12/2023

Date

DEDICATION

To all the incredible teachers making a difference every day.

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CHAPTER 1. A LONG HISTORY OF DISCRIMINATION: WHY TEXAS' SCHOOL FUNDING SYSTEM DESERVES A DEEPER LOOK

Introduction

Education has been a significant concern of Texans since its inception as a nation (TEA, n.d.). The failure of the Mexican government to marshal resources to establish a meaningful system of public education was listed as a reason for the push for independence (TEA, n.d.). Almost two hundred years later, Texans still grapple with their public education system's political, economic, legal, and racial implications. This introduction presents background information relevant to three subsequent articles that comprise this dissertation. The overarching theme: explore the most recent inequities in Texas school funding. The first article chronicles the use of QuantCrit as a theoretical framework over time and across fields of study through a systematic literature review. The second article uses ANOVA and regression analysis to explore the effects of Texas 2017 HB 21, legislation passed due to Texas' most recent school finance litigation. Finally, I examine the state policy of using student attendance data to calculate school funding allocations and the effects of this policy on students in poverty through a series of linear regressions. In the present chapter, I will briefly review the constitutional and litigious evolution of the school funding system in Texas, the main drivers of that evolution, and a discussion on how the structures of racial oppression have influenced school funding.

The Evolution of School Funding in Texas

School funding in Texas was formalized in 1845 with the creation of the *permanent school fund*, launched with $2 million in U.S. bonds that Texas received as part of its boundary claims against the U.S. (TEA, n.d.). Now, Texas spends over $70 billion annually on education (TEA, 2020). The method by which funds are distributed to Texas public schools has changed due to several lawsuits. To fully unpack the evolution of Texas school funding, it is essential to understand the historical, legislative, and judicial twists and turns Texas has taken to get to its current school finance policy.

Over its history, Texas has had eight different constitutions, the first being the Federal Constitution of the United Mexican States in 1824. Texas then formed a state constitution within the Mexican States in 1827. In 1836, Texas declared its independence and wrote its own constitution, called the Constitution of the Republic of Texas. Since joining the United States in 1845, Texas has had five more constitutions (1845, 1861, 1866, 1869, 1876). As of 2022, the Texas Constitution contained 517 amendments (Legislative Reference Library of Texas, n.d.). Each version of the Texas Constitution made mention of and provisions for education and taxation.

Education in the Various Texas Constitutions

Racial and cultural tensions have long been present in Texas public education. This traces back to when Texas was still part of Mexico. Conflict emerged between white Anglo settlers and Mexicans in the region. Various decrees mandated local funding for schools that poorer Mexican communities could not afford. There were also cultural differences in educational approaches that created disputes. As a result, a coherent

system of organized public schools failed to fully develop during this period (Braden et al., 1977). After its independence, Texas' constitution of 1836 stated that the state should create laws to provide a general system of education as soon as circumstances allow (Braden et al., 1977; TEA n.d.). During this period, white settlers strongly opposed a state tax that would support the education of poor Texans, who at this time were mainly Mexicans. As a compromise, the Republic created a system of land grants to support public education. This compromise led to the creation of a grand total of one school public school (Braden et al., 1977; Webb, 2005).

By 1845 Texas had joined the United States. Framers of the Texas State Constitution of 1845 had difficulty negotiating the formation of a public education system. Different influential groups had many different views on education. German immigrants felt there should be free public education for all, wealthy white southerners felt education was a private function, and Puritan immigrants wanted church involvement in education. Ultimately, the State Constitution of 1845 directed the legislature to establish free schools supported by property taxes. However, the feeling at the time was that schools should be privately controlled, so the state allowed for the public assistance of private schools. The same provisions were included in both the 1861 and 1866 Constitutions (Braden et al., 1977; Webb, 2005).

The Reconstruction Constitution of 1869 mandated free public schools for children ages six to eighteen (Webb, 2005) and the voluntary, private system of schools was abandoned during this time. Texas adopted the contemporary education model that existed in the North that included compulsory attendance, centralized administration, and school taxes. School taxes were a significant issue for most Texans of that time. They

viewed the system as a "tyrannical invasion of their cherished liberty" (Braden et al., 1977, p. 506). Texas racked up considerable debt during this time because of the Civil War and the newly formed education system. By 1875, the state had accumulated over $4 million in debt due to the new public school system (Webb, 2005). By 1875, anger toward the imposed educational system resulted in the bitterly debated Article VII of the Texas State Constitution (Braden et al., 1977; Webb, 2005). Article VII specifically outlined the public education system in Texas and is the framework still in use today.

1.1.1 Article VII of the Texas State Constitution

Partisan, economic, and racial considerations were all part of the creation of Article VII of the Texas State Constitution. Delegates at the Convention of 1875 represented many different views of education. Some longed for the return to the privately run, government-supported model. Others wanted a continuation or expansion of the current model. That mode, mainly ideated by Republicans, was already putting Texas into tremendous debt. Democrats pushed back against this model by creating a system that prevented an elaborate and expensive system favored by the Republicans at the time (Braden et al., 1977). Currently, Article VII has 19 different sections ranging from a basic mandate for public education to rules on grazing lands owned by public schools. The most important of these sections are Section 1 and Section 3. Article VII, §1 states that:

> *A general diffusion of knowledge being essential to the preservation of the liberties and rights of the people, it shall be the duty of the Legislature of the State*

to establish and make suitable provision for the support and maintenance of an efficient system of public free schools.

Article VII, §3 describes taxation for public schools in Texas. This section was so poorly crafted that confusion over its rules continues today (Braden et al., 1977). Initially, Texas paid poll and state property taxes to fund public education. The poll tax was in place until 2009 (however, nobody paid it), and the state property tax was phased out in the late 1970s. This section has little significance to public school funding today, except that local school taxation is subject to statutory control (Braden et al., 1977). The lack of influence of Article VII, §3 is mainly due to the repeal of property taxes in the 1970s through Article VIII, §1-e in the Texas State Constitution.

1.1.2 Article VIII

Article VIII in the Texas State Constitution outlines taxation and revenue. This section includes laws on tax uniformity, exemptions, and state income tax. Most directly impacting school funding was the abolition of property taxes in Article VIII, §1-e. The amendment added on November 5th, 1968, states, "No State ad valorem taxes shall be levied upon any property within this State" (Article VIII, §1-e). Currently, only local authorities have the power to tax property in Texas, and taxes outlined in Article VII, §3 were phased out by the late 1970s.

Articles VII and VIII comprise the framework legislators must operate within when crafting school funding bills. There have been multiple systems of school funding in Texas and equally as many lawsuits against them.

Laws, Lawsuits, and their Impact on Marginalized Populations

The Texas Constitution requires the legislature to provide a free and efficient system of public schools. With that mandate, Texas has had over forty years of challenges to the legality of its school funding system. These challenges have created a patchwork of temporary fixes that have made incremental steps toward a better education funding mechanism. Before evaluating the various laws and lawsuits that have led to the current school funding system in Texas and their impact on marginalized people, it is essential to understand the legal tests established to evaluate the constitutionality of school funding.

The Texas Supreme Court has set up three legal tests to evaluate school funding. The tests assess the adequacy, efficiency, and suitability of school funding by asking the following questions:

- Does the system accomplish a general diffusion of knowledge?
- Does the system produce results with little waste?
- Are students provided equitable funds?
- Is the system well-structured, operated, and funded?

(Funding Public Schools for the 21st Century, 2020)

Chief among the lawsuits is a challenge to a requirement that local districts implement a property tax at a specific rate in the face of a constitutional prohibition of a statewide property tax to fund education. Challengers allege that the requirement of a local tax subverts the state constitution. A second recurring legal challenge is that Texas'

funding model does not pass the efficiency test, which asks two questions. The first is, "Does the system produce results with little waste?" The second is "Are the students provided equitable funds?" (Griesinger et al., 2020). These lawsuits created a cycle of amending and rewriting educational funding laws, each seemingly struck down as fast as they are passed. The result has been temporary fixes to state education funding without long-term solutions (Elsaadi, 2015). Since 1970, there have been seven major school funding lawsuits in Texas (Griesinger et al., 2020). Combined with other significant legislative actions and legal results, these suits have created a muddled, makeshift, inequitable school funding system that has impacted marginalized populations.

1.1.3 Gilmer-Aikens Laws

The first significant reform to Texas school funding was in the Gilmer-Aiken Act of 1949 (Alemán, 2007; Webb, 2005). Sometimes called the Gilmer-Aiken laws after Texas Representative Claud Gilmer and Senator A. Aiken Jr., the three bills included in the Act were so hotly debated they led to the first all-night committee hearing in the state's history (Mauzy, 1995). This act increased the amount of state funding and consolidated over 4500 school districts into 2900 (Alemán, 2007; Mauzy, 1995). The bills resulted in the creation of the Texas Education Agency (TEA). While the bills did create the Minimum Foundation Program, a program that provides a minimum threshold for school funding in Texas, it did not fundamentally change how schools were funded in that funds were still mainly sourced from local property taxes, creating unequal state funding. The inequality is mainly due to the differences in property wealth across different areas (Knight, 2017). Many statewide commissions recommended a significant

increase in state funding and a restructuring of the system to increase equity in funding. Those recommendations were not followed in the final draft of the legislation.

Schools serving predominantly Mexican American students were most negatively impacted by the Gilmer-Aikens Act (Alemán, 2007). While the state began allocating a basic allotment to all districts, most school control was still at the local level. Local districts retained the ability to raise money through local property taxes to a level which best suited them. This method of taxation put property-poor districts at a considerable disadvantage since they did not have the capacity to raise money at the rate of their wealthier neighbors. This inequity led to organized student walkouts and a movement to elect more minority candidates on school boards in the 1960s (Alemán, 2013). Nonetheless, state legislators were not moved to craft legislation to improve funding equity. This led to the first major school finance lawsuit in Texas, *Rodriguez v. San Antonio Independent School District* (1973).

1.1.4 *Rodriguez v. San Antonio Independent School District: 1973*

The first case that played a role in Texas school funding was *Rodriguez v. San Antonio Independent School District* (1973) and was built on issues that Gilmer-Aiken failed to address. Schools in Texas serving predominantly students of color were overcrowded, neglected, and provided an inadequate education (Alemán, 2013; Griesinger et al., 2020). Further, the plaintiffs found the state's suggestion that poor school districts should solve their funding shortages by consolidating untenable. The plaintiffs countered that such a strategy would merely create large poor school districts but not alleviate any of the underlying issues. Ultimately plaintiffs framed the lawsuit as

a challenge to the unconstitutional denial of equal protections guaranteed by the Equal Protection Clause of the Fourteenth Amendment of the United States Constitution (Alemán, 2013; Griesinger et al., 2020). Their argument was as follows: property tax-based education funding system discriminated based on wealth. Upon reaching the U.S. Supreme Court, justices ruled that education was not a fundamental right of U.S. citizens. Instead, the rights of citizens to education rests within the constitutions and interpretations therein of each state. As such, the court essentially closed the door on any Equal Protection Clause claims to school finance at the Federal level and sent lawsuits such as Rodriguez back to the states (Nickerson et al., 2002).

By 1989, due to the refusal of Texas to pass any meaningful state education finance legislation, the 100 poorest school districts in Texas were taxed at a rate of 74.5 cents generating a revenue of $2,978 per student. The top 100 wealthiest districts were taxed at a rate almost half as much, 47 cents, and generated an average of $7,233 per student. Despite taxing at a much higher rate, poor districts had a fraction of the funds of wealthier districts. The lack of funding created a system where poor districts provided inferior education while taxing their residents much more than affluent districts (Alemán, 2013). Marginalized populations attempted to address their concerns through civil rights protests and lobbying efforts. However, the state of Texas refused to act, forcing the marginalized groups to seek legislative action.

The *Rodriguez* ruling forced the school finance issue to remain a state matter. What followed was a cat-and-mouse game of bill passage and subsequent litigation that remained active until 2016. Two key cases, *Edgewood I-IV* and *Morath v The Texas*

Taxpayer and *Student Fairness Coalition v. Morath* are suits which, in their shaping of law, moved school finance policy in Texas to its current model.

1.1.5 Edgewood 1-IV: 1989 –1995

Edgewood I-IV was a series of lawsuits brought by school districts challenging the constitutionality of Texas school funding (Griesinger et al., 2020). *The Edgewood ISD* cases spanned over eight years and were adjudicated many times. The origin of these suits was that the school finance system was unconstitutional based on the tests of efficiency and equity defined by the Texas Supreme Court.

1.1.5.1 *Edgewood I:* 1989

The initial argument of *Edgewood I* centered on a claim of inequity in school funding. In the late 1980s, the range of funding accorded Texas school districts was between $2,112 per student and $19,333 per student (Weiss, 2020). In a first ruling by the district court, the court held that the current finance system violated provisions of the Texas State Constitution: The Equal Rights and Equal Protections provisions of Article I and the efficiency provision of Article VII. Upon appeal by the state to the Texas Supreme Court, justices agree, finding the system was, in fact, unconstitutional due to its inefficiencies but chose not to address the claims of equal rights affirmed by the district court (Griesinger et al., 2020). An important result of this ruling was definition of efficiency. The Texas Supreme Court said in its ruling that:

> *Efficiency does not require a per capita distribution, but it also does not allow concentrations of resources in property-rich school districts that are taxing low*

> *when property-poor districts that are taxing high cannot generate sufficient revenues to meet even minimum standards. There must be a direct and close correlation between a district's tax effort and the educational resources available to it; in other words, districts must have substantially equal access to similar revenues per pupil at similar levels of tax effort* (*Edgewood I, 7-12*).

Thus, the Court determined that the disparity in funding violated the constitutional requirement of an efficient system of education.

There were two legislative results emanating from the court's ruling on *Edgewood I*. The first was S.B. 1019, which, among other things, created a system meant to equalize wealth in school funding. This program is known as *guaranteed yield* and still exists in a modified form today (Griesinger et al., 2020; Hegar, 2019). Guaranteed yield is the process in which if a district taxes at least a minimum tax rate the state will guarantee that they get at least the bare minimum funding, no less. For example, if a district taxes at the minimum mandated rate and generates $3000 per pupil in revenue, the state will subsidize the remaining amount to raise the per pupil revenue up to the basic allotment. In 2022, the basic allotment was just over $6000. In this example, the state would subsidize the remaining $3000 per pupil so ensure a base level of equity per tax effort. The next was in S.B. 1, which provided a wealth equalization scheme for the districts whose enrollment accounted for 95% of all students in Texas. The top five percent of wealthy school districts were excluded since the state did not have the funds to equalize to the level that the top five percent were funding at (Griesinger et al., 2020). The passage of S.B. 1 triggered an additional round of *Edgewood* lawsuits.

The findings in *Edgewood I* highlighted numerous racially related implications. First, the system still fundamentally protected wealthy, white-dominated school districts' interests. The exclusion of the top five percent of school districts, while reasoned by the financial inability to match those funds, really protected the superiority of the wealthiest districts. A tenant of CRT that applies here is that of interest convergence (Bell, 1980). Hidden in the accounting of S.B. 1 was a system that, while better, still allowed the wealthiest in the state to enjoy financial privilege out of the reach of the other 95%.

The second implication was in the focus of the Texas Supreme Court on wealth and inefficiency while ignoring the equal protection claims. The Texas Supreme Court seemed to have little appetite for discussing racism and equal protection claims. Since the funding system was already ruled unconstitutional due to lack of efficiency, they did not consider any other claims.

In the build-up to the lawsuit, two different legal strategies were proposed by the plaintiffs. The Mexican American Legal Defense and Education Fund (MALDEF), a leading Latino civil rights organization, wanted to make equal protection claims based on race. However, another group called the Equity Center wanted to focus the argument on issues of wealth disparity rather than race. Ultimately, although MALDEF did present its race-based equal protection argument, the prevailing legal strategy plaintiffs relied on rested on claims about efficiency and wealth inequality. While plaintiffs won the case, many felt the victory came at the expense of stronger race-based equal protection claims. MALDEF and its lawyers were disappointed that the Supreme Court completely disregarded discrimination claims. In retrospect, they regretted not pushing harder for the race-based equal protection strategy originally proposed (as noted by Alemán, 2013).

1.1.5.2 *Edgewood II*: 1991

Edgewood II challenged the legislation passed in Texas as a result of *Edgewood I*. In *Edgewood II*, the Court determined that the policies written to remediate weaknesses identified in *Edgewood I* did not go far enough. And, again, the school funding system was found unconstitutional. A central issue for the plaintiffs was the exclusion of the top 5% of wealthiest school districts in wealth equalization calculations. The Texas Supreme Court also highlighted the inherent problems with using property wealth as a determining factor for school funding.

The policy resulting from the ruling in *Edgewood II* included the creation of a new state property tax. The state exercised its power outlined in Article VII, § 3-e of the Texas Constitution, which states that "The Legislature may authorize an additional ad valorem tax to be levied and collected within all school districts for the further maintenance of public free schools" (149-50).

This policy created separate taxing districts and a system of redistribution. These taxing districts had no educational powers, just taxation responsibilities. Each of the newly created taxation districts contained multiple independent school districts (ISDs) (Griesinger et al., 2020; Hegar, 2019).

The Court acknowledged a few implications of its *Edgewood II* ruling on marginalized populations. The first was that reliance on property wealth as a determining

factor for school funding will always have issues (Griesinger et al., 2020). And that the current system created a situation in which some taxpayers had a higher tax burden for a less expensive education. The Court conceded that under the current system, property-poor school districts receive less funding than property-rich districts.

1.1.5.3 *Edgewood III:* 1992

The main concern of *Edgewood III* was the creation of County Education Districts (CEDs) in Texas. CEDs were intermediate education organizations authorized to collect taxes and distribute the funds to schools within the county of their jurisdiction. Opponents of CEDs argued that they were acting as a proxy for the state and their establishment violated a ban on the collection of state property taxes. While CEDs were county organizations, not state agencies, they were formed by the state, told the rate at which to set the tax, and told how to allocate the tax revenue (Griesinger et al., 2020; Webb, 2005). In essence, the state designed a system to collect a statewide property tax but had regional entities managing it. Ultimately, the Supreme Court ruled that if the state mandates a tax, sets the rate, and prescribes its distribution, it is a state tax.

The legislative session subsequent to the ruling saw the abolishment of the CEDs and put into place the "recapture" system in Texas. Recapture is the placement of a cap on the amount of money a taxing entity can receive. If there are two school districts that are taxing at the state minimum, they are entitled to the basic allotment. In practice, some school districts will generate more than the basic allotment ($6160 in 2022), and some will generate less. The schools that generate more than the basic allotment will send that money to the state to be redistributed to school districts that generate less than the basic

allotment giving all schools a base level of equity. This system aims to "share the wealth" and provide equity in school funding (Griesinger et al., 2020).

On paper, recapture seems like a simple solution to a complex school funding problem. Texas cannot create a statewide property tax based on the Texas Constitution. If Texas could, it would be able to simply collect all the property tax funds from around the state and redistribute it equally and adequately. However, because the Texas Supreme Court held in *Edgewood II* that any attempt of the state to implement a state tax would be quickly ruled unconstitutional, a workaround had to be created: recapture (Griesinger et al., 2020).

Recapture is far from a perfect system. Property poor school districts still face inequity in funding, mainly due to a section of the funding legislation known as golden and copper pennies. Golden pennies allow for a district to raise their own taxes up to a certain threshold. That amount is not subject to recapture. This means that wealthier districts' additional tax effort is rewarded at a higher rate than property poor districts. Each additional penny of tax effort in a wealthy district may raise their per pupil revenue thousands of dollars while in a property poor district it may only generate a few hundred dollars. The state does equalize that additional tax effort for the poorer districts, but only to a certain extent. Furthermore, in 2002, only 10% of schools were subject to recapture. These schools were predominately white and represented the wealthiest areas in the state (Alemán, 2007). Wealthy school districts felt like this practice was unfair to their local tax base. The system of recapture does not eliminate inequity, but rather provides a legal process for its perpetuation. (Alemán, 2007). Due to the allowed inequity in both funding levels and funds recaptured from a small segment of districts, both wealthy and poor

school districts filed complaints over the results of *Edgewood III*, leading to *Edgewood IV*.

1.1.5.4 *Edgewood IV:* 1995

In response to the legislation stemming from *Edgewood III*, wealthy districts claimed that the cap on district wealth was essentially a state property tax. By having a floor and a ceiling of property taxes for local governments, the state was setting the rate in which districts had to tax. Poor districts argued that the system was still inefficient and created disparities between rich and poor schools (Griesinger et al., 2020).

Ultimately ruling against the plaintiffs which included both wealthy and poor districts, the Texas Supreme Court held that even though the funding among school districts was unequal, there was enough funding to satisfy the Texas Constitutional requirement of a *general diffusion of knowledge* (Griesinger et al., 2020). The guaranteed yield formula for state funding reduced disparities for 85% of students. The recapture method and redistribution of funds created a floor of funding that brought up many of the poorer districts to a level closer to equitable. The Court found that this was enough to satisfy the *efficiency* and *adequacy* requirements of the Texas Constitution and that the funding allowed for a general diffusion of knowledge. To that point, the Court held that:

> *All districts are able to provide for a general diffusion of knowledge, but property-poor districts must tax at a slightly higher rate than property-rich districts to do so. When the focus is placed on the rate differential rather than on the gap in funding, it becomes evident that the existing disparity in access to*

revenue is not so great that it renders Senate Bill 7 unconstitutional (*Edgewood IV*, 32).

Moreover, the Court ruled that the cap on property wealth was not a statewide property tax but simply provided meaningful discretion (Griesinger et al., 2020). In essence, the Court determined the state had the legislative ability to determine what levels of taxation are appropriate for school funding in different districts and that this determination did not amount to a property tax, but rather a suggested range. It is important to note that a requirement of receiving recapture funds is that the districts tax rate falls within the minimum and the maximum that the state sets.

1.1.5.5 Implications of *Edgewood* Cases

While the implications of the four *Edgewood* cases were meaningful, the findings fell short of true equity. Minority schools in property-poor areas went from having to borrow money to make payroll to being able to put air conditioning in their schools (Alemán, 2006). Money became available to improve facilities, purchase computers, and improve basic necessities like restrooms (Alemán, 2006). When a group of superintendents representing poor, predominantly Hispanic-serving school districts were interviewed, their views on recapture (also known as Robin Hood) varied. Some superintendents questioned felt bad that the system was taking funds raised in other districts. They argued that Robin Hood could have been viewed as a hero to some and a villain to others (Alemán, 2006). Others felt no remorse because it should be considered the state's money as it is the state's responsibility to educate its students. One superintendent stated they had no problem with wealthier districts providing more for

their students as long as every student had enough, a theme that is recurrent in Texas education policy.

The superintendents Alemán (2006) interviewed had little appetite for including race in the school funding discourse. An overarching belief was that a group of white policymakers and organizational leaders would not be sympathetic to any cries of racism. Some argued that the upward mobility of some of the residents of the community and their subsequent exit from that community was a natural cycle. Others say there was no reason to engage in discourse surrounding race and funding as the politicians were unlikely to hear it (Alemán, 2006). There was also a fear of being perceived as weak or as if they were making excuses if they brought up race and funding. There was also a fear by respondents that they would be perceived to be playing the "race card" (Alemán, 2006). There was also a sense of futility in the discussion. There seemed to be a sense of "this is the best system we are going to get, so we need to learn to work within it." Overall, there was a subtle acknowledgment of racism within the Robin Hood method of school finance from these superintendents. There was not an overwhelming sense that they were willing to make sweeping claims of racial discrimination (Alemán, 2006).

The Texas Supreme Court did not hear another significant challenge that impacted legislation on school funding until the *Morath v. Texas Taxpayer and Student Fairness Coalition* in 2016.

1.1.6 *Morath v. Texas Taxpayer and Student Fairness Coalition: 2016*

A lower court ruled in favor of the plaintiffs in the *Morath* case, with appeals ultimately landing the case at the Texas Supreme Court. The main argument of the case

was that Texas was in direct violation of the Texas constitutional mandate for an *efficient system* of education that provides a *general diffusion of knowledge* (Griesinger et al., 2020; T.X. Const. art. VII, §1). An initial court ruling agreed that the current system was discriminatory against language learner students and students from poverty.

The Texas Supreme Court, in a complete turnabout from their previous rulings, held for the state. While they did dress down the current system with unreserved criticism, they used fairly technical reasons to uphold the constitutionality of the current system. The main impact of the ruling by the Texas Supreme Court in the *Morath* case was the interpretation that it is not the court's job to give guidance or legislate but rather rule on constitutionality (Kauffman, 2017). The court held that elected officials are the experts in crafting legislation and found that it was not the court's business to legislate. This interpretation gave the Texas House and Senate the freedom to wield expertise through legislation with no substantial guidance from the court other than a general recommendation for improvement (Kauffman, 2017).

The court also dismissed claims of inequity on the basis that it would be impossible for the state to address every claim of inequity among groups, as there are too many groups to evaluate. This interpretation made any future suits over inequity more challenging to argue. Within this section of the ruling, the held the state should focus on improving education for all students, not just marginalized groups (Kauffman, 2017).

A final significant implication of the court's ruling was on the idea of adequacy. The court determined that the legislature could and should determine what was adequate. A funding bill can be considered adequate strictly by the debate and passage of the bill by legislators, who, in light of this ruling, are deemed experts (Kauffman, 2017). Despite

evidence and testimony during the court case from many school finance experts such as Dr. Bruce Baker, the court placed the decision of adequacy in the hands of the legislature.

The *Morath* ruling is the most recent case heard by the Texas Supreme Court and remains the law of the land for Texas school funding. The carte blanche given to the Texas Legislature has resulted in two different school funding bills, with a third currently being debated during the 2023 session.

Recent efforts to create equitable school funding have been introduced by state representatives with the caveat that wealthy school districts can still provide "extra equity" to their own schools. In the wake of *Morath,* school superintendents from marginalized communities have had differing opinions on Texas's changing school funding landscape. Some felt poorly for wealthy schools subject to recapture. Others did not want to be seen as "stealing" from affluent schools. One superintendent seemed resigned to the inevitability of inequity in school funding and was happy just to have enough (Alemán, 2006).

With *Morath,* the Texas Supreme Court itself has shifted on the ideas of equity and adequacy. In the *Edgewood* rulings, equity and adequacy were cornerstones of their ruling. In *Morath,* the Court argued that more money does not guarantee better schools and students. Furthermore, they redefined efficiency as to mean that schools get roughly the same access to funds with no requirement for equality in educational outcomes. Educational equity was determined to be a lofty goal of society but not a constitutional requirement (Kauffman, 2017).

Each one of the Supreme Court rulings and school finance bills presented has had a meaningful impact on how Texas funds its schools. More importantly, those rulings have

all contributed to inequity in school funding in Texas. While it seemed as if equity gains were made in earlier rulings, the latest ruling, at its very best, has an indifferent tone towards equity. At worst it perpetuates systematic racism.

Framing the Relationship Between Race and Poverty for this Study

Race and poverty have a complex, closely intertwined relationship in the United States. Race influences many factors, including socioeconomic status (Khullar & Chokshi, 2018). While race and poverty should not be considered inherently synonymous, the historical and systematic treatment of marginalized groups in the US can be considered a factor in current levels of wealth (Hanks et al., 2018; McIntosh et al., 2020; Mineo, 2021). Even though it can be argued that many factors can be associated with poverty in the United States, the intersectionality of race and poverty has been well-documented (Hanks et al., 2018). Systematic discrimination, wealth and asset accumulation, and educational barriers add context to the association between race and poverty in the United States.

1.1.7 Systematic Discrimination

Black Americans have had difficulty building wealth since the inception of the United States. Barriers to equity sprung up as quickly as slavery ended through acts such as sharecropping, forced prison labor, Jim Crow laws, and voter disenfranchisement (Hanks et al., 2018; NAEH, 2021). Despite progress made through Civil Rights legislation, deeply rooted societal structures perpetuate injustice to marginalized communities. The legacy of redlining, the persistent school-to-prison pipeline, and

discriminatory lending practices have systematically entrenched wealth disparities between races (McIntosh et al., 2020). These disparities not only exist for Black families. Latinx, Asian, and Indigenous people are subject to similar levels of systematic discrimination. Individually and collectively, these barriers made accumulating wealth generationally in Black and other marginalized families nearly impossible.

1.1.8 Wealth and Asset Accumulation

Wealth accumulation in the United States reflects the lasting impact of historical systematic discrimination (Mineo, 2021). The disparities in wealth are shaped by employment disparities, generational wealth accumulation in the form of property ownership, and educational discrimination (Mineo, 2021). There has been very little closure in the minority-white wealth gap in the last 70 years. Homeownership, a measure of wealth, was at 44 percent for Black families and 75 percent for White families. Black families have 10 cents in wealth for every dollar a white family has (Hamilton & Logan, 2020). White families in the US hold over 80 percent of all assets in the US. Furthermore, Hispanics have a net wealth of less than 25 percent of that of White families. Compounding this issue is the burden of consumer debt. Black families have the highest rate of consumer debt as a total of their debt than any other racial group. In 2022, White families comprised 64 percent of all households and held 81 percent of all assets in the US.

Poverty levels tell a similar story. In 1959, 50 percent of all African Americans were poor. As of 2015, 24 percent of African Americans are poor versus only 9 percent of Whites. Hispanics in the United States had a poverty rate of 21 percent in 2015. Rank and Hirschl (2001) demonstrated that only 13 percent of Black families would experience

at least one year of affluence (income at least ten times the poverty level) in their lifetime. That same study showed that 55 percent of white families would experience affluence (Rank & Hirschl, 2001). The entanglement of poverty and race is further complicated by the inclusion of the educational disparities associated with school districts serving students from poverty.

1.1.9 Educational Barriers

The most significant factors in explaining educational disparities in the US are poverty, segregation and school districts policies, language learning resources, and health resources (Darling-Hammond, 1998). Education outcomes for minority children are much more a function of access to resources than their race. Resources such as quality teachers, books, technology, and school buildings are unequally distributed in the US (Darling-Hammond, 1998). Inequitable school finance systems inflict disproportionate harm on minority and economically disadvantaged students (Piché & Taylor, 1991). Schools serving predominantly students of color were spending half that of white schools, which is associated with worse educational outcomes (Kozol, 1991; Darling-Hammond, 1998). The barriers present for kids who attend poorer schools put those children at a disadvantage in academic performance and ultimately being competitive in the job market.

The educational system in Texas closely resembles the situation described above. While it would be inappropriate to claim all poor students are minorities or that all minorities are poor, the Texas Education Agency demographic data tells a story very similar to the one we see nationally.

1.1.10 Race and Poverty in Texas Education

Data on race and poverty in the 2020 TEA Texas School Snapshot aligns with the US census data in terms of the quantity of minority students that also face poverty. (TEA, 2020). For school districts with an enrollment greater than 2000 students, 99 out of 100 of the most impoverished districts serve predominantly minority students. The poorest 98 non-rural schools in Texas serve predominantly Black and Hispanic students. Nine of the top ten poorest schools in the sample have a Hispanic population of 97 percent or higher. The only school below 97 percent has a Hispanic enrollment of 57 percent, which constitutes their largest demographic group. Within the ten poorest schools in this sample, the average white enrollment is 0.73 percent. In fact, out of the 100 poorest schools in Texas, the average white enrollment is 12.11 percent, the average Hispanic enrollment is 71.715 percent, and the average Black student enrollment is 13.5 percent. Furthermore, schools where at least 40 percent of their students are Black have an average EcoDis rate of 78 percent.

Within this dissertation, subpopulations I examine are linked based on race and poverty, both in my sample and in my discussions. This idea is supported by the literature (CITE) and the demographic data collected by the state of Texas. The methods and language used in this coupling are not meant to generalize the experiences of any one race or demographic group but rather provide a framework to understand better the effects of the policies presented on the minority groups who are overrepresented in the poverty data in the samples I use.

Conclusion

Texas has and continues to experience a complicated dynamic presented by the intersection of race, poverty, politics, and school funding. I will use a three-article format to connect the overarching theme of exploring the most recent inequities in school funding in Texas. The first of the three articles will both describe the theoretical framework of QuantCrit and discuss the growth and utilization of the framework. The second paper is a statistical evaluation of the efforts made after the most recent Texas Supreme Court decision to improve equity in Texas education funding. The last paper builds off the second paper by offering the use of attendance in school funding as a possible explanation for the inequity present supported by statistical evidence. Together, these three papers represent a framework that adds context to the analysis, an evaluation of a policy created in response to a Texas Supreme Court ruling, and a quantitative exploration intone possible underlying policy that could be exacerbating already present inequities in Texas school funding.

CHAPTER 2. EXPLORING THE GROWTH AND UTILIZATION OF QUANTCRIT AS A THEORETICAL FRAMEWORK FOR QUANTITATIVE STUDIES: A SYSTEMATIC LITERATURE REVIEW

Introduction

QuantCrit, short for "Quantitative Critical Race and Ethnic Studies," is an emerging methodology integrating critical race theory and quantitative methods to investigate racial and ethnic disparities in society (Gillborn et al., 2018). This approach bridges the gap between critical race theorists and quantitative researchers who have traditionally operated in different spheres of academia (Castillo & Gillborn, 2022; Garcia et al., 2018; Gillborn et al., 2018).

QuantCrit challenges traditional quantitative research approaches that often ignore the influence of race and ethnicity on social phenomena. By integrating Critical Race Theory, a theoretical framework that examines the intersection of race, power, and oppression, with quantitative methods, QuantCrit provides a more nuanced understanding of racial and ethnic disparities in society and seek to provide an avenue to disrupt white logic in quantitative research (Castillo & Gillborn, 2022; Garcia et al., 2018; Gillborn et al., 2018, Zuberi & Bonilla-Silva, 2008). QuantCrit draws heavily from early CRT scholarship including works from Delgado and Stefancic (2001), Matsuda (1991), Ladson-Billings and Tate (1995), and Solórzano (1997).

QuantCrit has several benefits over traditional quantitative research approaches. By incorporating critical race theory, QuantCrit provides a more comprehensive understanding of how racism and other forms of oppression shape social phenomena.

Additionally, by using counter-storytelling and intersectionality, QuantCrit can better capture marginalized groups' experiences and provide insights into how to address social disparities. QuantCrit's evolution has the potential to significantly contribute to our understanding of social disparities and inform policies and interventions aimed at reducing them (Castillo & Gillborn, 2022; Garcia et al., 2018; Gillborn et al., 2018).

In this paper, QuantCrit is treated as a framework as opposed to toolkit. Some researchers may utilize QuantCrit as a toolkit. By viewing it as a toolkit, researchers may pull strategies, techniques, or specific instruments from QuantCrit. In this sense, the researcher may lean on QuantCrit for practical guidance or even an outline on which to base the research objective. I view QuantCrit as a theoretical framework. Grant and Osanloo (2014) call a theoretical framework the "foundation from which all knowledge is constructed (metaphorically and literally) for a research study. It serves as the structure and support for the rationale for the study, the problem statement, the purpose, the significance, and the research questions" (p. 3). The use of QuantCrit as a theoretical framework lets the reader know the lens in which the research will be conducted and discussed. QuantCrit reflects my own beliefs in the power of quantitative analysis in critical research.

QuantCrit's emergence is driven by a recognition of the limitations of traditional quantitative research and the need to incorporate critical perspectives and challenge positivist viewpoints often present in quantitative research (Gillborn et al., 2018). Early work in QuantCrit centered on the perspective that we need to think critically about how racism is embedded in all parts of our society (Gillborn et al., 2018). At the heart of QuantCrit is a recognition that quantitative methods have been used historically to

disguise and legitimize racist inequities (Gillborn et al., 2018). This concealment or even neutral positionality about the existence of racial bias in statistical reporting serves to protect the status quo. The initial work of QuantCrit was guided by three research questions:

1. Can quantitative methods, long critiqued for their inability to capture the nuance of everyday experience, support and further a critical race agenda in educational research?
2. What possibilities does a 'QuantCrit', or quantitative methodological approach anchored in CRT, offer researchers interested in critically studying educational issues associated with race and ethnicity?
3. How can 'QuantCrit' be in conversations with other tools of critical race qualitative analysis such as critical race feminisms?

   Garcia et al., 2018, p. 150

QuantCrit can be operationalized as the deliberate effort by critical scholars operating in a quantitative space to bring to light the socially constructed nature of statistics and the role that systematic racism can have on their construction. It provides a framework for scholars to critically evaluate the context of the quantitative methods as well as craft a counternarrative to the neutrality that is often presented.

2.1.1 Objective

This systematic literature review aims to explore the growth and utilization of QuantCrit as a theoretical framework. A theoretical framework is a set of related concepts, definitions, and propositions that presents a systematic view of phenomena (Grant & Osanloo, 2014). Scientists use theoretical frameworks to guide their research

and to provide a foundation for their hypotheses, methods, and interpretations of results. A theoretical framework helps researchers clarify their research question and identify the key variables they want to study (Grant & Osanloo, 2014). This can help to ensure that their research is focused and has a clear direction. A theoretical framework can also provide a common language and set of concepts that can be used to communicate research findings to other scientists and the broader public. Theoretical frameworks support the accessibility of research for a wider audience (Grant & Osanloo, 2014).

2.1.2 Research Questions and Objectives

The purpose of this paper is to examine the growth and utilization of the theoretical framework QuantCrit. Two research questions frame this systematic literature review.

Question 1: Has the utilization of QuantCrit, as a theoretical framework, expanded since its inclusion in the Spring 2015 Critical Race Studies in Education Association Conference in Nashville, Tennessee?

Question 2: What fields of study are utilizing QuantCrit as a theoretical framework in their studies?

The Spring 2015 date was selected due to the identification of many early QuantCrit authors as the starting point for the dialog that led to the framework's creation.

2.1.3 Author Subjectivity and Author Limitation

While a best practice for qualitative researchers, positionality statements are rare in quantitative studies (Castillo & Gillborn, 2022). To be transparent about my position in

this research, it is essential to include my positionality. I identify as a white cis-gendered, heterosexual, non-disabled man. This identity has provided me with opportunities not available to others in United States society. My experience growing up in a lower-middle-class household, as the child of two immigrants, and as a first-generation college student has motivated me to dismantle my privilege and seek equity and adequacy for all. I want to use my research to identify and dismantle policies and systems of oppression. Throughout my discussion in this research, my perspective on race and poverty will be limited by the privilege implicit in my current identity.

Another important disclosure is my professional background. I have spent my career in public education, and all my research efforts have taken place in the field of education. Therefore, my exposure to research outside the education field is limited. My limited experience in research in fields such as medicine, engineering, and political science restricts my ability to pull from a large quantity of research exposure in a way that a person with a rich background in those subjects may be able to. This may limit the depth of my analysis for fields outside my background.

Further limiting this systematic literature review was the isolation in which this review was done. Other systematic literature reviews, including a QuantCrit review conducted by Tabron and Thomas (2023), leverage multiple authors to examine the articles. By using many authors and a designated coding scheme, the review has less potential for bias as well as a rich dialog about the inclusion and exclusion decisions. While embarking on this research alone, my inclusion and exclusion decisions were entirely mine alone which leads the results subject to my own bias and interpretations of the utilization of QuantCrit as a theoretical framework.

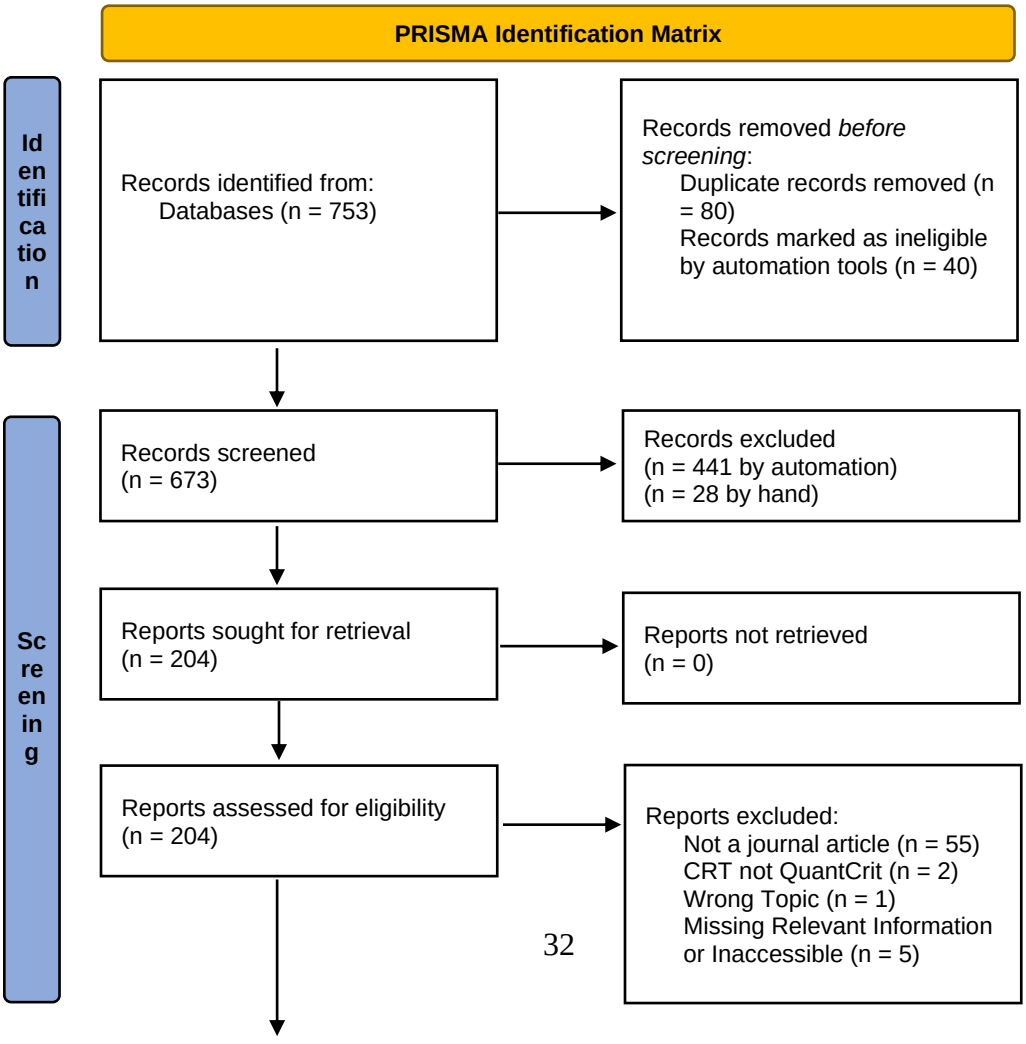
Methodology

Systematic literature reviews have many different functions. They can address questions that are not clearly answered by a single study. They can also identify other areas of research. Systematic literature reviews can also generate or evaluate theories about what a particular event or phenomenon occurred (Page et al., 2021). The results of a systematic literature review are only as valuable as the methodology in which the review was conducted. Systematic reviews should be transparent, easy to follow, and describe not only what exactly was done but also the results.

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA), published in 2009 and updated in 2020, is a meta-analytical tool that can be used to transparently report the purpose for the review, how the review was conducted, and the findings (Page et al., 2021). PRISMA is comprised of a checklist of 27 items that support addressing explanation and elaboration in systematic literature reviews as well as exemplars (Page et al., 2021). PRISMA has been employed in over 60,000 reports with endorsements from roughly 200 journals. PRISMA is not a conduct guide that determines validity and legitimacy of the study but rather a system that is useful for planning and conducting systematic literature reviews to ensure that all information is included in the study (Page et al., 2021).

2.1.4 Methods of Search

I followed the four-step PRISMA process for a systematic literature review (Moher et al., 2020). This process involved identification, screening, eligibility, and inclusion. The results can be seen in Figure 1.


PRISMA Identification Matrix
Identification
Records identified from:
Databases (n = 753)
Records removed *before screening*:
Duplicate records removed (n = 80)
Records marked as ineligible by automation tools (n = 40)
Screening
Records screened
(n = 673)
Records excluded
(n = 441 by automation)
(n = 28 by hand)
Reports sought for retrieval
(n = 204)
Reports not retrieved
(n = 0)
Reports assessed for eligibility
(n = 204)
Reports excluded:
Not a journal article (n = 55)
CRT not QuantCrit (n = 2)
Wrong Topic (n = 1)
Missing Relevant Information or Inaccessible (n = 5)

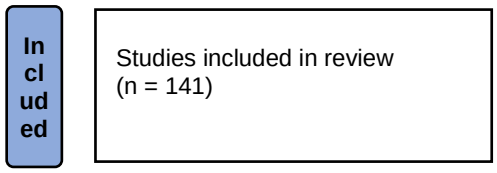


Figure 1. PRISMA Methodology

2.1.5 Identification and Search Strategy

I purposefully chose to use simple search criteria for this systematic literature review. Initially I searched only the word “QuantCrit” in databases. I initially considered expanding the search to include terms such as quantitative and Critical Race Theory. However, those results found no sources not already uncovered by a simple search including only QuantCrit. The results of the CRT search produced duplicates already found within the QuantCrit search. Furthermore, the expanded searches increased the difficulty of examining the sources with no gains in identification. Within this initial search, I did not limit the search to only peer reviewed articles, casting as wide a net as possible. My initial search started using database sources from the University of Kentucky. The university's InfoKat search has access to 711 databases, including popular databases such as Ebsco, JSTOR, ProQuest, and ERIC. In using this method, I was able to access many databases without visiting each individual database. I manually reviewed search results, reading each study’s abstract and then entering bibliographical information into a spreadsheet if the words QuantCrit were explicitly mentioned in the title, abstract, or as keywords. This part of my search yielded 34 titles.

Recent studies have suggested that Google Scholar has access to well over 300 million records (Delgado Lopez-Cozar et al.; 2019, Gusenbauer, 2018). Thus, I then went to Google Scholar, searching the term “QuantCrit.” From this search, 719 records appeared. This number was not feasible manually sort. I therefore used Harzing's *Publish or Perish* software to query Google Scholar to download the search results into a spreadsheet (Harzing, 2007). *Publish or Perish* is software that scans academic databases for keywords and aggregates the data into a spreadsheet (Harzing, 2007). This query

created a list with all the publishing information and the papers' abstracts. I added this information and my list of 34 articles to make my set of 753 records to examine.

2.1.6 Initial Exclusion

The 753 records and uploaded the database I created into the software Rayyan to support my inclusion and exclusion decisions (Ouzzani, et al., 2016). Rayyan is machine learning software that filters the results of literature searches. Rayyan supports systematic reviews by searching within the available data for the keywords the user wants. For example, if a user has a set of article titles, abstracts, and dates, they could filter those articles by the publication timeline by selecting that as a filter. The user could also screen for all articles that contain a keyword or even by author. The benefit is it reduces the time the user has to evaluate each result manually. One study showed that Rayyan users reported a 40% average time saving using the software's screening and predictive modeling tools (Ouzzani et al., 2016). Another benefit is the artificial intelligence sorting mechanism of the tool. Once the articles are entered into the software, there are a series of categories that the articles are automatically sorted into. The categories include data of publication, language, and keywords from titles.

My first exclusion of records included those published in languages other than English (n=18). While it would have been beneficial to explore the non-English items especially in terms of the dispersion of QuantCrit, I was unable to accurately explore these texts through translation. I also removed all records published before the study's period of interest (2016) (n=22). This was done so to target the time frame of the study during which QuantCrit has been formally labeled as a framework. The development of QuantCrit started at the Spring 2015 Critical Race Studies in Education Association

Conference in Nashville, Tennessee. Researchers decided to produce a special issue as the biproduct of a panel entitled “Advancing Critical Race Theory (CRT) and Critical Race Studies Methodologies and Methods” (Garcial et al., 2018). Prior to this, the term QuantCrit had not been operationalized as the theoretical framework for this study. Winkler (2022) and Reeping et al. (2023) argue that the term QuantCrit was not coined officially until 2018 by Gillborn et al. I included all dates after 2016 to ensure that I did not miss any articles. I also used Rayyan to scan for duplicates, of which 80 were found. This left 673 records to examine.

2.1.7 Abstract, Keyword, Title Screening, and Retrieval

Rayyan then scanned the remaining articles’ abstracts and keywords for the term QuantCrit. This yielded a list of 232 articles for further consideration. I manually reviewed the remaining pieces' titles, keywords, and abstracts. I removed another 28 records from consideration due to the lack of inclusion of QuantCrit in the title, abstract, or keywords. Most of these papers that I excluded at this stage had a heavy emphasis on CRT but were not specific to QuantCrit. I also reviewed many of the articles excluded by Rayyan’s abstract and keyword screening. Again, most of the articles excluded by Rayyan were CRT articles not specific to QuantCrit. There were also some articles that were excluded that were about quantum mechanics. To create a spreadsheet of eligible records, I downloaded the remaining articles' reference information (title, author, date, journal, URL, citation, and abstract) (n=204).

2.1.8 Inclusion and Exclusion Criteria

I manually examined the records to assess sources. The first step was to establish exclusion criteria. I decided only to include published journal articles in this study. This decision was made to support the creation of a homogenous data set that could be easily discerned by the field of study. Thus, I eliminated book reviews, dissertations, book chapters, working papers, and some CVs that survived the initial screening (n=55). From here, I eliminated false positive manuscripts that mentioned Critical Race Theory (CRT) but not QuantCrit specifically. Some reports were not clear enough through an analysis of the abstract to make an informed determination. In these instances, I went to the original article and determined the eligibility from a lengthier analysis. This screening found two articles were CRT articles and not QuantCrit. These articles used CRT as a framework and made no mention of QuantCrit specifically. One article was deemed ineligible because it was about investment and manufacturing and made no mention at all of QuantCrit. Finally, (n=5) articles were eliminated due to missing relevant information such as journal title, publication date, or inaccessibility. The remaining 141articles met the inclusion criteria: articles with the keywords QuantCrit present in their title, abstract, or keywords, with a date published in the timespan desired, and in a journal I could access.

Methods of Analysis

2.1.9 The Expansion in the Utilization of QuantCrit as a Theoretical Framework

The first step in analyzing the remaining articles (n=141) was to sort by date the spreadsheet onto which the information was entered. Figure 2 shows the results of sorting the data by date. Data for the 2023 group was current through February of 2023. The numbers of articles by year are as follows: 2018 (n=8), 2019 (n=12), 2020 (n=13), 2021 (n= 41), 2022 (n=53), and 2023 through February (n=14). While my initial plan was to include values from 2016, no records met the inclusion criteria until 201.

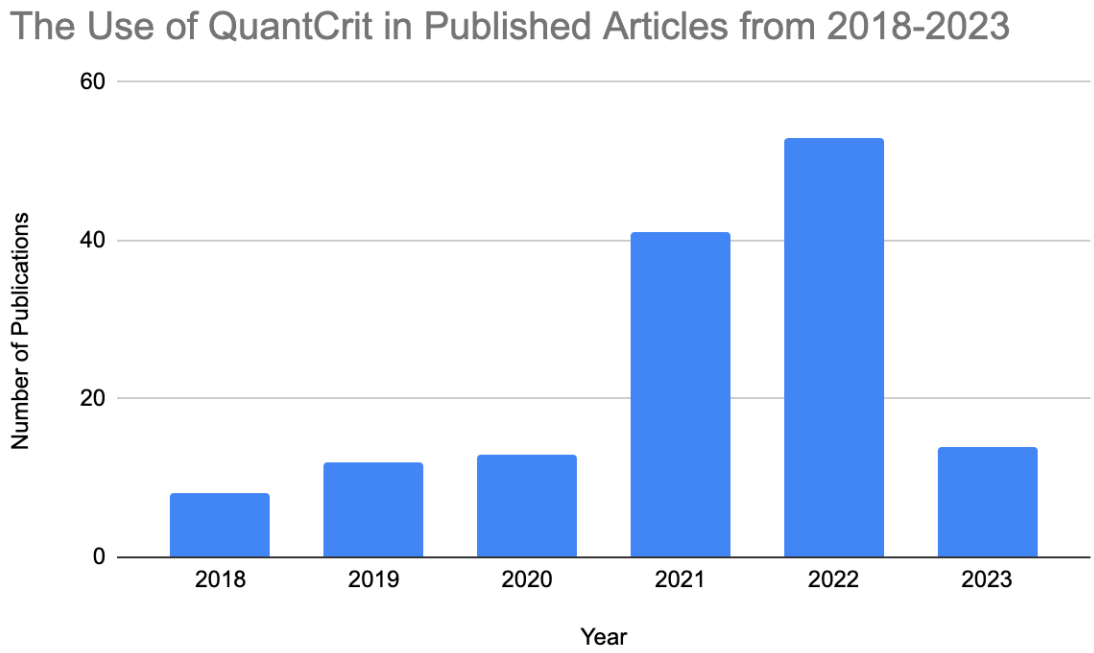


Figure 2: The Use of QuantCrit in Published Articles from 2018-2023

2.1.10 What Fields of Study are Utilizing QuantCrit as a Theoretical Framework?

Answering this question with the data provided proved more complex than analyzing the years of publication. Discerning and grouping the publications required me first to identify the general field of study. The difficulty in this was that some articles overlapped in many different fields. For example, one paper focused on methodology, social justice, and education. Another was focused on sociology and medicine. Therefore, I found that while some articles simply fit into one category, others necessitated multiple labels.

Another difficulty was in identifying the groupings or categories for the fields of study. I used education as a field of study. This grouping included higher education, P-12 education, and educational policy. This grouping excluded family science, which could arguably be included in the field of education along with a field such as human development. If an article explicitly focused on discussing the use of a specific methodology, it also got the grouping label of methods. Examples of titles of methods papers are "No Longer Just a Qualitative Methodology: The Rise of Critical Race Quantitative and Mixed-Methods Approaches" and "Best Practices for the Conduct of Antiracist Research: Time for Formal, Tailored Curricula" (DeCuir-Gunby et al., 2021; Montoya-Williams et al., 2022). These papers explicitly discussed or advocated for using QuantCrit as the methodological approach.

I went to the source if I could not discern the information from the title, abstract, or publishing journal-title. From my analysis, I created the following groups for fields of study: criminal justice, social justice/DEI, education, engineering, methods, family

science, health and medicine, human development, non-profit studies, political science, psychology, and social studies. Figure 3 and Table 1 below show the results of the groups. An article can belong to more than one group.

Table 1. The Number of QuantCrit Articles Published in Each Field of Study

Field of Study	Number of Published Articles
Criminal Justice	3
Social Justice/DEI	12
Education	106
Engineering	1
Methodology	14
Family Science	6
Health and Medicine	5
Human Development	3
Non-Profit Studies	1
Political Science	1

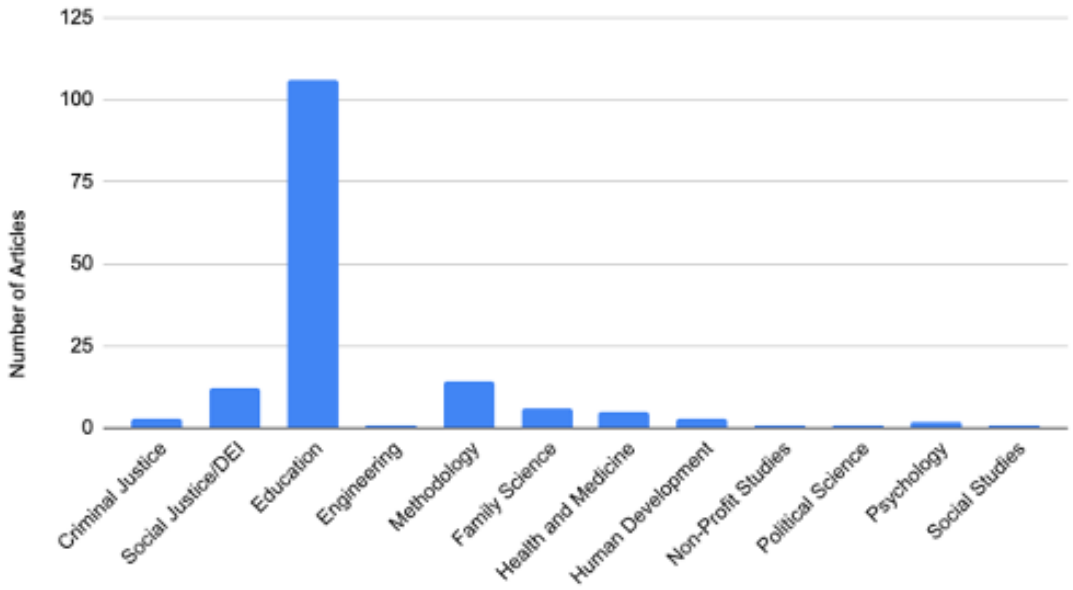


Figure 3. Fields Publishing Articles Including QuantCrit

Limitations

There were limitations to this analysis. First, as discussed above, the groupings, while intentional, were subject to my own bias. I am from an education background and have little experience in fields such as family science, engineering, or health and medicine. Other researchers might have found a nuanced difference between these fields and divided the categories more based on their experiences. Even the large grouping of "education" might seem inappropriate to some. For instance, an argument could be made that this group should have at least been divided into higher education and P-12 education. For simplicity, education was treated as one category. When trying to fine tune groupings, I transposed an idea of QuantCrit into this study. One tenant of QuantCrit is that "when researchers are collecting and analyzing data, they should ensure their categorization is informed and resonates with the communities of interest" (Gillborn et al., 2022, p.8). In QuantCrit work, this can be demonstrated by the utilization of demographic information. Using a term like Asian or Hispanic for group names aggregates many different backgrounds and cultures into a large label that does not necessarily respect the nuances the study might want to uncover. However, if the demographic information is too narrow, the findings are no longer generalizable across a larger population (Gillborn et al., 2022).

Translated to this study, this means groupings cannot be so large as to lose meaning but not so small as to lose statistical significance. For example, if all these articles had

been placed in a category of academic research, the results would be unusable as the grouping would be large and vague. Similarly, the values lose significance if the sets are subdivided so much that each group only has a few members. The health and medicine group could have been further subdivided into groupings such as mental health, cardiovascular health, labor and childbirth, and so on. Each group would likely only have one or a few members. When these groupings are too large or too small, it becomes challenging to generalize. Even with these limitations, some generalizations can still be made from the data.

Findings and Discussion/Results

2.1.11 Growth in QuantCrit Utilization

The data for the utilization of QuantCrit supports the idea that QuantCrit as a theoretical framework is growing in its utilization. These findings support the numbers found by Gillborn et al. (2022), who found that prior to 2017, QuantCrit was mentioned just four times. Between 2017 and 2021, they found over 160 mentions of QuantCrit (Gillborn et al., 2022). The term *mentions* was not operationalized in that paper so it is difficult to infer the inclusion of the papers in the count they produced. Rather than *mentions*, my study uses the specific inclusion of QuantCrit in the title, abstract, or keywords as a factor for inclusion. The results of my study suggest that there has been a significant increase in the utilization of QuantCrit. There was a drop in 2020, most likely due to the COVID-19 pandemic. If that outlier is removed, a steady increase in publications including the term QuantCrit is observed. While speculative, if we

extrapolate the QuantCrit work done through February of 2023, we could expect around 80 published articles including QuantCrit to meet my inclusion and exclusion criteria by the end of the calendar year.

To provide context for this finding, I explored the growth of Critical Race Theory (CRT) into different fields as a parallel process. This was done through a light look at the literature surrounding CRT and the field of health sciences and served to simply provide me with a basic idea to the growth of a theoretical frameworks in other fields. The incorporation of CRT into public health research felt similar to its inclusion into education finance research. While the establishment of CRT can be dated back to 1989, it was not until 2017 that the field of public health even had an established student-led course on CRT (Ford & Airhihenbuwa, 2018). In 2018, the first biomedical journal published a supplement on CRT research, almost 30 years after CRT's introduction (Ford & Airhihenbuwa, 2018). CRT was not discussed in the field of mental health until 2003 (Ford & Airhihenbuwa, 2018). Similar to the world of quantitative research, the field of health and medical research has produced several CRT-based frameworks that apply tenants of CRT to that particular field. Approaches such as Public Health Critical Race Praxis, Critical Race Empiricism, and Social Epidemiology are CRT-based approaches tailored to fit the needs of the specific field (Ford & Airhihenbuwa, 2018). The value of these similarities as areas for future research will be discussed in more detail below.

2.1.12 The Utilization of QuantCrit by Different Academic Fields

The lack of QuantCrit articles in the health and medical field was a noticeable in the dataset. Of the five identified articles, only one was a study of health outcomes (racial disparities in breast cancer). The other four covered methodological topics or assessed

large scale health outcomes of marginalized groups. Early statistical studies in health and medicine incorporated many eugenic concepts and ideologies (Zuberi, 2001). Medical reasoning often views racial disparities in health outcomes as being biological rather than resulting from societal factors (Zewude & Sharma, 2021). While I have no experience in the field of health and medicine, QuantCrit would be a valuable tool for researchers trying to uncover differing health outcomes for patients. Zewude and Sharma advocate for the "radical" usage of CRT to address medical education, clinical care, workplace racism, and medical research (2020). QuantCrit would be particularly useful in this field, since marginalized groups typically receive lower quality healthcare and experience worse health outcomes compared to non-marginalized groups. QuantCrit could help reveal and analyze the societal and institutional factors contributing to these healthcare disparities (Egede, 2006). Williams et al. (2022), who wrote on antiracist research in medicine, suggested it is

> past time that training in antiracist research be made widely available and required. This will require us to invest time and funding into the creation of formal, expert-informed, didactic curricula for conducting research in an antiracist manner, to tailor such curricula to biomedical researchers at different stages in their careers, to require such training as a prerequisite for funding, and to evaluate the effect of such training on both researchers and research participants (p. 438).

One part of the data that stood out were 14 articles that spoke directly to methodology. The titles of these papers mostly included terms such as *best practices, data collection*, or *quantitative methods*. Analysis of these papers revealed that they primarily established the groundwork and justification for conducting further research using QuantCrit

methodology. Examination of these papers showed that they mainly set the stage for future research. Articles from the engineering field discussed opening up engineering to new epistemologies in the hopes of more inclusive practices (Goodwin et al., 2021). A JAMA paper argued the usefulness of QuantCrit in methodological courses taught to medical students (Williams et al., 2022). An article about culturally responsive evaluation aligned some QuantCrit tenants with their critical qualitative inquiry methodology (Bryan & Lewis, 2019). Another paper demonstrated the difference between traditional statistical practices and one that utilized a QuantCrit approach (Young & Young, 2022). While some of these papers applied QuantCrit to produce statistical output, others discussed the merits of the framework for their particular fields. There are many areas of future research based on the groundwork created by these early methodological papers that will be discussed later.

2.1.13 What is the Impact of QuantCrit on Academia?

The limited data available in this systematic literature review makes it challenging to draw broad conclusions about the overall impact of QuantCrit. Further research is needed to effectively assess and quantify the influence of QuantCrit methodology.

Impact is defined as the potential for research to benefit society and contribute to achieving desired societal outcomes (NSF, 2021). The U.S. National Institute of Health defines research impact as the likelihood for the project to exert a sustained, powerful influence on the research fields involved (Rapple, 2019). To conceptualize impact, Belcher and Halliwell (2021) took the vague and ambiguous definition of impact operationalized by many in and around academia and federal research organizations and

created a model that demonstrates the causally interrelated steps in a results chain or results web-based on outputs, outcomes, and realized benefits. For this study, impact is limited to the evaluation of the outputs as there is limited context to analysis. As such, the following conclusions can be drawn from the data.

First, the impact of QuantCrit on academia is focused mainly on the field of education. 75% of the articles qualified for this review were from the field of education. Because QuantCrit is rooted in statistical practice and quantitative methodology, I am unsure as to why other quantitatively leaning fields are not leveraging this framework. This would be an exciting area of future research.

Several dissertations were written between 2022-2023 which listed QuantCrit as a theoretical framework. As these scholars enter academia or research, they will bring their knowledge of QuantCrit as a framework. Furthermore, as these researchers grow in their respective fields, they will be influencers on future generations of scholars, potentially introducing other academics to QuantCrit.

Of the articles in this systematic literature review from fields unrelated to education, they set the stage for future research. They represent arguments for the utilization of QuantCrit over the application of it. It would be interesting to revisit this systematic literature review five years hence to see if the seeds of QuantCrit planted by these researchers have made any headway in their respective fields.

2.1.14 Future Research

Three studies can emerge directly from this research. The first is an exploration of similar theories, their origin dates, and their growth over time. For example, a researcher could look at a theory such as CRT or Feminist Theory to evaluate its growth and

utilization over time. Side by side, it would be interesting to see how QuantCrit compares in growth to other theoretical frameworks over time.

A second study would investigate the natural progression of introducing theoretical frameworks into different fields. As stated previously, many academic fields appeared to be exploring the potential of QuantCrit methodology by establishing a preliminary framework for how the theory could be applied within their particular area of study. It would be valuable to determine if these groundwork studies were a phenomenon specific to QuantCrit or if other frameworks experienced similar evolutions. This study could be done by evaluating the early usage of different frameworks in different fields, especially in their discussion and advocacy for the framework.

The third study could evaluate the permeation of theories such as CRT into different fields of study over time. For example, how long after CRT's mainstream adoption was leveraged in fields such as medicine or psychology? If this research is known, it might be possible to predict the rate at which QuantCrit may be adopted into other fields. This research might also prove valuable to researchers introducing theoretical frameworks into academia in the future.

Conclusion

The utilization of QuantCrit as a theoretical framework is growing steadily, evidenced by the systematic literature review results. Despite this study's limitations, it is clear that the field of education is leading the way in using QuantCrit as a framework. Further research is needed to explore the reasons behind the trends uncovered in the systematic literature review. Evaluating dissertations by up-and-coming academics might

prove valuable to see the research interests and theoretical frameworks used by those moving into academia. A comparison of early literature involving a theory similar to QuantCrit might also shed some light on the natural evolution of these theories and explain the quantity of methods-based papers uncovered in this study. QuantCrit is one tool that can be used to bring about social justice and social awareness to research. It is encouraging to see steady growth in its usage.

The next paper in this three article dissertation frames Texas' most recent Supreme Court ruling on school finance through the lens of QuantCrit. Since the emergence of the latest school finance data from Texas, I was able to evaluate the results of Texas House Bill 21 (HB 21), a school finance bill, and frame those results along with the opinion in the *Morath v. Texas Taxpayers et al.* Texas Supreme Court decision using QuantCrit to support in adding context to the statistical analysis.

CHAPTER 3. A RESPONSE TO INEQUITY? A QUANTCRIT EVALUATION OF THE RESULTS OF TEXAS HB-21 ON SCHOOL FUNDING

Introduction

For the past 50 years, Texas' system for funding public schools has been continually revised through lawsuits and legislative actions in response to claims that the system is unfair and insufficient. In 2017, Texas introduced and passed a new school finance legislation in response to the 2016 Texas Supreme Court ruling in the case of Morath v. The Texas Taxpayers and Student Fairness Coalition. With the publication of school finance data in the time frame of interest, researchers can report on the outcomes of the legislation and evaluate the validity of claims made during the crafting of legislation. In this paper, I will provide an overview of the history of legal challenges to Texas' school funding system. I will also discuss the background of Texas House Bill 21 from 2017 and present an analysis using ANOVA and regression techniques to evaluate the outcomes of HB 21. This analysis is framed within the theoretical framework of QuantCrit.

Literature Review

3.1.1 A Brief History of School Funding in Texas

The origin of school funding in Texas dates to the early 1800s. At that time, Texas had a decentralized education system, with school funding coming primarily from

local property taxes and community donations (TEA, n.d.). This system resulted in significant funding disparities between wealthy and poor areas, a problem that persists today (DeMathews & Knight, 2022).

Texas has one of the largest and most diverse student populations in the United States. That, combined with the size and sparseness of some of Texas' rural communities, provides a difficult challenge for school funding. Based on claims of inadequacy and inequity, Texas has been subject to multiple lawsuits and overhauls throughout its history. Despite the efforts to reform the system, the issue remains complex and controversial in the state. A brief review of some of Texas school finance's most influential legislative actions and Supreme Court decisions follows.

3.1.1.1 Texas Public School Finance Act of 1949

The Texas legislature passed the Texas Public School Finance Act, also known as the Gilmer-Aiken Laws, in 1949 establishing a statewide public school finance system (Etienne-Gray, 1995; Morowski, 2009; TEA, n.d.). based on a combination of state and local funding, not just local property taxes. Under this system, school districts would get a minimum amount of money per student from the state. Local communities would be responsible for providing additional funding such as they needed it and could provide it (Etienne-Gray, 1995; Morowski, 2009; TEA, n.d.).

The Gilmer-Aiken laws also established the State Board of Education and the Texas Education Agency (TEA). The State Board of Education would be responsible for setting education standards and overseeing the operation of the state's public schools, while the TEA would be responsible for implementing and enforcing state educational policies. The Gilmer-Aiken Laws also established the School Foundation Program,

designed to distribute funds from the state's Available School Fund, providing the state's share of the funding (TEA, n.d.). The money for this came from fuel taxes and earnings from the Permanent School Fund, established in 1876, made up of revenue from land sales and leases on offshore oil lands and other mineral holdings (TEA, n.d.).

While the Gilmer-Aiken laws represented a significant step forward for Texas, they were not without their critics. One criticism of the Gilmer-Aiken laws was that the financing system borne out of the legislation did not provide enough funding to ensure that all students received a quality education, especially poor or rural students (Mauzy, 1995). In addition, relying on local property taxes to supplement funding created a disparity in money between wealthy and poor areas.

In the years following the passage of the Gilmer-Aiken Laws, Texas continued to struggle with school finance issues. These issues included underfunding and inequitable distribution of funds. This led to the passage of the Texas Education Reform Act (TERA) and Texas House Bill 72 in 1984. Texas House Bill 72 had eight goals, one of which was specific to Texas school finance.

3.1.1.2 Texas Education Reform in the 1980s

There were many results from TERA and House Bill 72 (HB 72). Steps were taken to modernize the educational system, including standardizing curriculum, providing a statewide teacher certification process, and movement toward providing more equitable funding of subpopulations (TEA, 1987). The bill included language that increased the amount of funding from the state and mandated a floor of salaries for educators (TEA, 1987).

The State Board of Education adopted numerous rules to implement the new funding system. The new system was based on the number of students in a school district as opposed to the previous system that based funding to a large extent on the number of personnel in each district. Part of the new funding rules included financial adjustments for small school districts, districts with sparse populations spread over wide distances, districts in urban and suburban areas, where the cost of goods and services is high, and districts with larger numbers of experienced and higher paid teachers. These adjustments were an effort to provide equity to differing demographic areas. The bill also required that 65% of school funding be spent on direct classroom instruction. The bill added over $2.3 billion to the state's education, reducing the reliance on local property taxes (TEA, 1987). These reforms remained in place until the state was met with a series of lawsuits.

3.1.2 A Brief Overview of School Funding Lawsuits

For more than forty years, Texas has faced challenges to the legality of a school funding system. These challenges have resulted in temporary fixes and incremental steps towards improved education funding mechanisms. Each of the challenges reached the Texas Supreme Court, and in its deliberation, the Court has used three legal tests. These tests assess the system's ability to provide equitable funding, achieve a general diffusion of knowledge, produce results with little waste, and be well-structured, operated, and funded (Griesinger et al., 2020). A recurring theme in the legal challenges to Texas' school finance system is that it fails to meet the constitutional mandates of adequacy and equity.

3.1.2.1 *Edgewood* lawsuits

The Edgewood Independent School District is a low-income district in San Antonio, Texas that has been at the center of several landmark school funding lawsuits in the state. The Edgewood cases involved challenges to the constitutionality of Texas's school funding system, alleging that the system violated the state constitution's requirement for a "free and efficient" public school system.

Edgewood ISD v. Kirby (1989) was the first Edgewood case. It challenged the constitutionality of Texas's school finance system, alleging that it violated the state's equal protection clause by providing inadequate funding for low-income districts. The Texas Supreme Court agreed, ruling that the system was unconstitutional and requiring the legislature to create a more equitable funding system. The result was SB 1, which equalized wealth among 95% of Texas school districts, meaning it provided the same level of funding to every school district in Texas except the wealthiest five percent who were allotted more. The reason the five percent were excluded is due to the financial inability of the state to match their level of funding for every school district and the lack of desire to reduce that five percents level of funding. Therefore, it was decided to equalize funding for to the 95 percentile. The other response was SB 1019, which created a second level of funding that designated supporting funds for students' different needs such as special education and English language learning (Griesinger et al., 2020; Hegar, 2019).

The subsequent lawsuit was *Edgewood II* (1989). This case challenged the revised school finance system created in response to the first Edgewood case, alleging that it still failed to provide adequate funding for low-income districts. Plaintiffs argued that even though wealth was equalized to the 95% of wealth, true equalization would require

wealth to be equalized across every school in Texas. The court found that the system failed to provide a substantially equal education to all students, which violated the state's constitutional requirement for a free and efficient public school system. The legislative response to this was SB 351, which established 188 county education districts (CEDs) designed to collect and distribute taxes on behalf of the state since the state is constitutionally prohibited from implementing a state property tax. The creation of the CEDs led to the third *Edgewood* case (Griesinger et al., 2020; Hegar, 2019).

The third lawsuit in this series, *Edgewood III* (1992), challenged the new funding system created in response to the second *Edgewood* case, alleging that it still failed to provide adequate funding for low-income districts and that the CEDs were a de facto state property tax. The Texas Supreme Court again agreed, ruling that the system was unconstitutional and ordering the legislature to create a new system. The legislature responded by creating SB 7, which eliminated the CEDs and created a system called *recapture* for Texas schools. Recapture caps the wealth that school districts can bring in and redistributes those funds from wealthy school districts to bring lower income school districts funding up to a minimum level. (Griesinger et al., 2020; Hegar, 2019).

The final lawsuit in the series was *Edgewood IV* (1995). This case challenged the funding system created in response to the third Edgewood case, alleging that it still failed to provide adequate funding for low-income districts and that the cap on funding for wealthy districts was a proxy state property tax. The Texas Supreme Court ruled that the system was constitutional, and it was able to a general diffusion of knowledge. The basis of this system is still in use today. This aspect of Texas funding is colloquially known as

Robin Hood, because it takes money from wealthy school districts and gives it to poorer ones. (Griesinger et al., 2020; Hegar, 2019).

3.1.2.2 Robin Hood in Texas School Finance

Recapture, or Robin Hood, is a system in which revenue generated by local property tax is capped at a specific per-student value (TEA, 2020; Villanueva, 2022). The state of Texas sets a basic funding amount per student that school districts should receive. Currently, this basic allotment is $6,160 per student.

Local school districts can tax property owners in their district to raise additional education funds. For example, a district may tax $1 for every $1,000 in property value. If a district raises more than the basic allotment per student through local taxes, any excess funds above $6,160 must be sent back to the state. For instance, if a district taxes at $1 per $1,000 in property value and ends up with $8,160 per student, the extra $2,000 per student would go back to the state.

On the other hand, if a district taxes at the same $1 per $1,000 rate but only raises $2,000 per student locally, the state will provide additional funds to get that district up to the $6,160 basic allotment.

In this way, the state redistributes funds from property-wealthy districts to property-poor districts to equalize funding across districts with similar tax efforts. (TEA, 2020; Villanueva, 2022). This mechanism is in place mainly due to the constitutional provision banning a statewide property tax. This workaround essentially gives the state the authority to move locally generated funds where they see fit. This law is so unpopular in Texas that the 2003 the Texas Legislature approved a bill requiring that the Robin

Hood system be revoked by 200. However, the legislature was unable to come up with a constitutionally valid plan that was deemed acceptable (TEA, 2020; Villanueva, 2022).

The result of recapture on local school budgets has been significant. In 2023, recapture payments filled the attendance credit coffers with over $5 billion. In 1994, only 34 school districts paid into recapture. By 2023, that number had grown to over 240 school districts (TEA, 2023). Along with the increase in recapture has been the decrease in state contribution to educational spending. Arguments have been made that the state uses recapture to balance its education spending. Rather than increase the state allotment of funding, money is generated locally and redistributed as state funds (TEA, 2023).

Complicating the issue the increase in recapture is the growing reliance of property-poor districts on the recaptured funds. While wealthy districts lament the loss of their funds they pay into the attendance credit account, poor districts worry about losing the increased funding they receive through the wealth equalization system. (Swaby, 2019).

The Texas Supreme Court did not hear another significant challenge on adequacy and equity in school finance until *Morath v. The Texas Taxpayer and Student Fairness Coalition et al.* in 2016.

3.1.3 *Morath v. The Texas Taxpayer and Student Fairness Coalition et al.*

In *Morath v. The Texas Taxpayer and Student Fairness Coalition et al.* (2016), plaintiffs argued that the Texas school funding system was in direct violation of the Texas Constitution's Article VII, §1 and Article VIII. They claimed the current system failed the adequacy, suitability, and efficiency legal test mentioned above (Griesinger et

al., 2020). In the initial lower court ruling, a Travis County District Court Judge held the current school finance system violated Article VII, §1 and Article VIII, §1-e of the Texas Constitution. The judge held the current system failed to provide adequate funding to school districts with high numbers of English language learner (ELL) students and low-income students, contained structures that prevented school districts from providing adequate education to poor and ELL students, failed the efficiency test be requiring poor districts to tax at a higher rate but receive less revenue, and was unconstitutional since most districts were being forced to tax near the top of the property tax cap. When the case went to the Texas Supreme Court, that court reversed the lower court, holding the current funding method was constitutionally sound and met the bare minimum requirements of adequacy, sustainability, and efficiency (MALDEF, 2016). While the court ruled that the law was not technically unconstitutional, they were less than impressed with the quality of the current funding system. Justice Willett, who penned the opinion, concluded, "We hope lawmakers will seize this urgent challenge and upend an ossified regime ill-suited for 21st Century Texas" (*Morath v. The Texas Taxpayer and Student Fairness Coalition et al., 2016*).

The Texas Supreme Court further held that it was their job to interpret the laws, not create them. Therefore, after lambasting the school finance system, they gave no recommendations for a system, described in their own words as "byzantine." The Supreme Court disagreed with a lower court ruling in that there were inadequate funds based on expert testimony, essentially stating that they were not equipped to rule on what was adequate as that should be a legislative function *(Morath v. The Texas Taxpayer and Student Fairness Coalition et al., 2016*). The argument of equity was defeated on the

grounds that there only needs to be access to substantially equal revenue for facilities necessary for an adequate system. The calculated ratios of difference in funding were not found to be in excess of what the court deemed adequate (*Morath v. The Texas Taxpayer and Student Fairness Coalition et al., 2016*).

The result of that *Morath* influenced the creation of Texas HB 21 in the 85th legislative session of the Texas Legislature. In response to the testimony and rulings, multiple education bills were introduced. Bills covering agenda items such as school vouchers and charter school funding were high on the agenda, as was reform in school funding. Compounding the pressure on the legislature was the growing exhaustion of the Texas taxpayer on an ever-increasing local property tax. What resulted from the bicameral negotiations was Texas HB 21.

3.1.3.1 Texas 2017 HB 21

In 2017, the chair of the House Public Education Committee in Texas stated, "If we don't do a school finance bill, you will have school districts that will close. That's a fact. That's indisputable" (Whittaker, 2017). Thus, it was hoped the passage of Texas HB 21 would address many of the claims made in the *Morath* case. The bill's initial version was supported by almost 1,500 school superintendents and school board members. Ultimately, however, after a special session, nearly $1.5 billion was removed from the bill, posing, what some critics deemed a threat to cash-poor school districts (Swaby, 2017). The version of the bill that ultimately passed instead supported cash-strapped districts by moving money from the Health and Human Services Commission earmarked for state Medicare to the TEA to support schools through a series of grants. Among those were financial hardship grants, funds for charter schools, extra funds for small school

districts, and funds to support autism and dyslexia programs (Swaby, 2017). Further funds were used to support the insurance system for Texas teachers (Kall, 2017). The Senate legislative budget board claimed that this additional equalization would primarily benefit districts having lower property wealth per student (Senate Legislative Budget Board, 2017). When House Bill 21 was passed in 2017, Texas House Speaker Joe Straus said the bill did not do enough for education but took some steps forward for retired teachers and struggling school districts (Swaby, 2017). However, research by the Urban Institute found the bill provided more support to white rural schools than poor schools in Texas (Mudrazija et al., 2019). While HB 21 increased the basic per-student funding allotment, a 2017 TEA brief noted this allotment had more than doubled since 2006. However, that statement overlooked the fact that compared to 2010 funding adjusted for inflation, the new basic allotment actually represented a $216.41 decrease per student (TEA, 2017). Now that some time has passed, it is possible to assess the actual impact of HB 21 on Texas school finance.

Research Questions

The first research question to be explored is, "Did the passage of HB 21 change the mean level of funding for non-rural school districts in Texas?" The second research question is, "Can the change in funding due to HB 21 be predicted by school districts' levels of poverty?"

Theoretical Framework

The interpretation of quantitative data can be challenging, as statistical techniques can be complex, and the data may be subject to bias. To address these challenges, I have framed this work using QuantCrit (Gillborn et al., 2018).

The theoretical framework of QuantCrit is rooted in critical theory, a sociological and philosophical approach that seeks to challenge and deconstruct dominant social structures and systems of power. QuantCrit formally emerged in a paper by Gillborn et al. (2018) titled *QuantCrit: Education, Policy, 'Big Data' and Principles for a Critical Race Theory of Statistics.* In this paper the authors argued that the goal of QuantCrit was not to create a new branch of CRT but a toolkit that emphasizes the application of a CRT framework in research employing quantitative analytical techniques. The framework draws on critical race theory, feminist theory, and other critical social theories to provide a comprehensive and intersectional approach to evaluating the quality and rigor of quantitative research studies.

At its core, the theoretical framework of QuantCrit is based on the idea that research is neither neutral nor objective and is influenced by the researcher's positionality and the social and historical context in which the research is conducted. This means that research can reproduce and reinforce existing power structures and systems of oppression or challenge and disrupt them. QuantCrit seeks to provide a framework for evaluating research grounded in critical social theory and emphasizes the importance of reflexivity and critical reflection on the research process and results (Gillborn et al., 2018).

The theoretical framework of QuantCrit is based on five fundamental principles. The working paper *How to "QuantCrit:" Practices and Questions for Education Data*

Researchers and Users (Castillo & Gillborn, 2022) provided a template of principles to consider when conducting critical quantitative research. The principles are:

- centrality of racism,
- numbers are not inherently neutral,
- racial constructs are not natural,
- data can't speak for itself, and
- numbers can be used for social justice (Gillborn et al., 2018).

Some principles closely mirror CRT such as the centrality of racism to life in the United States. Other tenants lean specifically into quantitative such as the concept of numbers not being neutral.

3.1.4 The Centrality of Racism

Race is a complex, fluid, political, and social creation (Gillborn et al., 2018). It is more than just a variable. Simply describing a person's race in a statistical study does not provide all of the context needed for proper analysis. The social dynamic of race does not lend itself easily to quantification. Efforts to measure race superficially risks misrepresenting the nature of the relationships between different racial groups (Gillborn et al., 2018).

3.1.5 Numbers Are Not Neutral

QuantCrit rejects the idea of the neutrality of numbers. "Quantitative data are frequently viewed as objective, neutral, and free from bias" (Castillo & Gillborn, 2022, p.5). Each step in quantitative methodology has the potential to be influenced by racist interests. Quantitative approaches have been used to normalize inequity or advance

eugenics (Zuberi, 2001). Therefore, it is important to understand the conflicts of the researcher as well as the context of the sampling and analysis. One's purpose for gathering the data, how they describe categories, their choice of sampling methods, and their analytical techniques choices are at risk of racial bias.

3.1.6 Race is a Social Construct: For 'Race' Read 'Racism'

Deficit thinking toward different races can provide a misguided interpretation of the results of a quantitative study. "Where race is associated with an unequal outcome, it is likely to indicate the operation of racism, but mainstream interpretation may erroneously impute race as a cause in its own right as if the minoritized group is inherently deficient somehow" (Gillborn et al., 2018 p.15). The deficit mindset for analyzing data on racial groups can put the blame of the problem on the racial group rather than the racism that created the problem. The patterns and problems being evaluated are not caused by the population's race but are shaped by racism toward the population (Gillborn et al., 2018). The inclusion of race as a variable in quantitative studies can be challenging to navigate. If the groups assigned are 'whites' and 'everyone else,' many layers of racial and social complexities can be overlooked (Gillborn et al., 2018). Similarly, if every racial group is considered in a study, the saturation of different groups may make the sample sizes insignificant, rendering any data useless (Castillo & Gillborn, 2022). Race should be used as appropriate based on the question the researcher asks." Where the lines are drawn, and who draws those lines, will exert a huge influence on the patterns that emerge from the data" (Castillo & Gillborn, 2022, p.8).

3.1.7 Data Cannot Speak for Itself

A key tenet of critical theory is that all data is socially constructed (Castillo & Gillborn, 2022). Social research is shaped by who is conducting the study, who funds the research, how it is researched, why it was decided to be investigated, the selected methodologies, the sampling, and other aspects of the research. This does not mean that data is simply made up. Data and its interpretation are subject to the researcher's positionality and interests (Castillo & Gillborn, 2022). Every stage of a study is subject to racist influences and assumptions (Gillborn et al., 2018). In attempting to uncouple factors such as race, maternal education, poverty level, and educational attainment in a linear regression, a researcher might be oversimplifying the relationship that systemic racism has in creating that coupled environment. Racism does not operate separately through these factors but within these factors." In a society that is structured by racial domination, the impact of racism will be reflected across many different indicators simultaneously" (Gillborn et al., 2018, p.18).

3.1.8 Numbers Can Be Used for Social Justice

According to QuantCrit, statistics is not a 'value-free,' 'politically ambivalent' practice (Gillborn et al., 2018). Researchers should not reject the data out of hand, nor should they accept that data has any neutral or enhanced status (Gillborn et al., 2018). QuantCrit explores the complexity of numbers within the social context they were derived and how they continue to create or legitimize racism (Gillborn et al., 2018). It is essential that within this application of QuantCrit, the stories presented are not discarded because they offer an unwelcome truth. Similarly, highly selective, meritocratic, slanted

studies need to be called out for what they are. Statistical practices can become dangerous when they are utilized to justify systemic racism based on' performance' or some other merit-based metric that dismisses the context and selection of the groups in that study.

As discussed in Chapter 1, my belief is that the coupling of race and poverty in this study provides a more complete examination of the problem and fully speaks to the demographic affiliation present in the dataset. QuantCrit speaks to the counter storytelling that can occur through critical quantitative analysis. Part of that storytelling involves using the historical systematic injustices that have kept many minorities in poverty as context to explain the quantitative results. For me, this starts with the linkage of race and poverty. QuantCrit provides a framework for quantitative researchers to understand, plan for, and describe the results and limitations of a study in all of its context.

3.1.9 The Utilization of QuantCrit as a Framework in this Study

This chapter does not assume a QuantCrit framework in regard to the analysis of variance (ANOVA) interpretation. The influence of QuantCrit, a framework, isn't directly evident in this section of the study. The primary goal of this analysis is to identify any potential increase in average funding over the examined time period. However, this initial analysis does not consider variables such as race, poverty, or any other marginalized groups and therefore cannot be considered within the theoretical framework of QuantCrit.

In the subsequent linear regression analysis, we specifically focus on poverty, a factor intricately connected with the students of color's educational funding in Texas, as detailed in Chapter 1. This deeper statistical exploration and the linkages it uncovers enables us to fully embrace and address the principles of QuantCrit. Importantly, the

consideration of these demographic indicators facilitates the formation of a counter-narrative that accurately depicts the experiences of the marginalized population under investigation. In the absence of such detailed examination, the dominant narratives could remain unchallenged, potentially preserving the status quo.

This is not unlike a research study discussed by Gillborn in his presentation with CERES in 2019 (Gillborn, 2019). In this keynote, Gillborn presented information regarding the Timpson review of school exclusions in Britain (Graham, et al., 2019). The study essentially demonstrated that by controlling for certain variables such as poverty, attendance, and special education status, there was not a large difference in school exclusions among different marginalized groups. When those variables were not controlled for, large differences between whites and marginalized groups are uncovered. This discussion demonstrated the strength of crafting a counternarrative, especially in quantitative discussions.

Research Methods

I chose two different statistical tests to evaluate the results of Texas HB 21 on school finance in Texas. The first model used is an ANOVA. First used in the 1930s by behavioral scientists, analysis of variance or ANOVA is a statistical technique developed by Sir R.A. Fisher that can be used to determine if there is a statistically significant difference between two or more categorical variables by testing for differences in their means. (Simkus, 2022; Tweney, 2005). ANOVA can be broken down into one-way and two-way ANOVA. One-way ANOVA has one independent categorical variable and one continuous dependent variable (Simkus, 2022). An example of this would be measuring

the association of three different reading intervention programs with students' reading scores. ANOVA uses F as its test statistic. The F statistic is the variance due to the treatment divided by the variance due to chance. A higher F value suggests that the variables are significant. Which variable is different cannot be determined from a simple ANOVA test, just that at least one of them was different (Simkus, 2022). For my study, I chose the more conservative Bonferroni correction as the post hoc test. In this ANOVA model, I evaluated the difference in means of school funding for my sample between the years before and after the passage of HB 21. I calculated the difference in funding by using 2015 as a constant for funding, as it was uninfluenced by any ongoing litigation. From there, I subtracted the 2015 levels of funding for each district from their 2016, 2017, and 2018 levels of funding to create three sets of values (one for each year) that represented the difference in funding between those periods. The values were also adjusted for inflation using the consumer price index as the adjusting value.

The second analysis I performed was a linear regression examining the difference in funding for the 2018 school year, as calculated above as the dependent variable, and the poverty level reported in 2018 as the independent variable. The poverty level is represented in Texas by the number of students on free and reduced lunch in each school district. This statistical evaluation aims to see if there is a statistically significant association between the two variables (Sykes, 1993). Another way to look at it is to ask if the independent variable can predict the dependent variable contained within the data set. Linear regression analysis was initially conceptualized through Galton and Pearson's work studying the genetic inheritance of sweet peas (Stanton, 2001). By 1896, Pearson had published his first work on regression and correlation (Stanton, 2001).

3.1.10 Sample

The sample for this study was all public-school districts in Texas from 2015 to 2018. The data was all available on the Texas Education Agency (TEA) School Snapshot data board located on the TEA website. The school districts selected for this study met the following criteria: larger than 2000 in enrollment across all years, non-charter school districts, and not specialized school entities such as juvenile justice programs. School districts with less than 2000 students were eliminated due to the additional funding they get, which is inconsistent with the majority of funding for Texas students. School districts with over 2000 students account for over 85% of the students in Texas. The remaining 15% of students are eligible for additional funding based on the size, location, and sparseness of the districts they attend. Charter schools and specialized school entities are funded differently, so they were also removed from the sample. The resulting sample size for the ANOVA work was n= 979 across three years. The sample size for the regression analysis was n = 325 for the 2018 school year.

Analysis

The first hypothesis tested was that there was a difference in the means of funding difference between the years 2016 and 2018. Those dates refer to the year that particular school year ended. For example, the 2015-2016 school year is known as the 2016 school year for this data set. HB 21 was passed in 2017 and took full effect during the 2018 school year. To conduct this analysis, I started by cleaning the data. The first step was to align the values annually using a vlookup formula in Excel. This alignment of school

district values allowed me to only compare values present across the years of interest. Next, I normalized the funding values at 2015 dollars using the consumer price index as a measure of inflation. Next, I calculated a difference in the funding level for each school district by subtracting the 2015 level from the inflation-adjusted value for each year. This provided me with three categorical variables for the years 2016-2018 and the continuous variable of difference in funding. These values were placed in JMP, and an ANOVA was conducted. JMP is a multivariate statistical software from IBM. The years 2016 and 2017 were retained in the data set to aid in comparing the post HB 21 data. These values provided a benchmark for which to compare the 2018 data set. Five outliers more than 3.29 standard deviations away from the mean impacted the initial ANOVA values. Those values were eliminated, and a second ANOVA was conducted. This ANOVA was significant with a p-value of <.001 and an F of 33.3287 with 2 degrees of freedom. These results demonstrated that at least one of the means was different than the others. Using a Bonferroni correction, I determined that the 2018 funding means were statistically different from the 2016 and 2017 levels ($p<0.001$). There was no statistical difference in the means of the 2016 and 2017 levels ($p=0.1684$). The calculated mean for the 2018 school year was 561.99. This value demonstrated that there was a mean increase in funding that was statistically significant between the years that HB 21 was passed. On average, for the sample, there was an increase in funding of $561.99 per student. The next analysis I conducted determined if the funding was targeted at reducing the inequity litigated in the *Morath* ruling.

Table 2. ANOVA Values for 2016-2018 and the Difference in School Funding

Summary of Fit

Rsquare	0.065068
Adj Rsquare	0.063152
Root Mean Square Error	782.7767
Mean of Response	295.441
Observations (or Sum Wgts)	979

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Year	2	41620966	20810483	33.9630	<.0001*
Error	976	598033673	612739.42		
C. Total	978	639654639			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
2016	326	110.708	43.354	25.63	195.79
2017	326	191.929	43.354	106.85	277.01
2018	327	582.804	43.288	497.86	667.75

Std Error uses a pooled estimate of error variance

To determine whether funding was distributed in a way that supported improved equity in school funding, I completed a regression analysis of the funding difference associated with a school district's EcoDis proportion. EcoDis is a representation of the percentage of students in a district that are on free and/or reduced lunch. The null hypothesis was that there was no association between the change in funding after HB 21 and the proportion of a school district identified as EcoDis. The alternative hypothesis is that there is an association between the change in funding after HB 21 and the proportion of a school districts students identified as EcoDis. The model that resulted from the regression analysis was a very poor fit. The data demonstrated that EcoDis status was not an accurate predictor of the change in funding for a school district. The R Square value was 0.001 and the adjusted R Square value was –0.02. The p-value was 0.653 with an F of .203 and 1 degree of freedom. The unstandardized B was –1.936, and the standardized Beta was –0.025.

Table 3. Linear Regression Values for the Evaluation of EcoDis and Change in Funding

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	576667.927	1	576667.927	.203	.653[b]
	Residual	917049519.641	323	2839162.600		
	Total	917626187.568	324			

a. Dependent Variable: DeltaFund2015-2018

b. Predictors: (Constant), STUDENTS: % ECONOMICALLY DISADVANTAGED

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.025[a]	.001	-.002	1684.981483431

a. Predictors: (Constant), STUDENTS: % ECONOMICALLY DISADVANTAGED

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	735.264	273.044		2.693	.007
	STUDENTS: % ECONOMICALLY DISADVANTAGED	-1.936	4.296	-.025	-.451	.653

a. Dependent Variable: DeltaFund2015-2018

Discussion

An important aspect of this research design is the intentional use of QuantCrit as a framework. A valuable tenet of QuantCrit is that data cannot speak for itself. The interpretation of data is socially constructed and socially interpreted. "It follows, therefore, that researchers should not presume to interpret their findings in a vacuum, uniformed by the experiences and insights of the communities that are directly affected by their work" (Castillo & Gillborn, 2022, p. 12). The following discussion will elaborate on this and provide context for the data analysis.

The analysis was done in two stages to answer two research questions. The ANOVA part of the study was designed to see if the passage of HB 21 did indeed increase student funding as the legislature had claimed it would. There was a significant difference between the means of the difference in school funding levels adjusted to 2015 dollars before and after the passage of HB 21. The mean funding level for non-rural schools went up $561.99 between the 2015 and 2018 school years.

With this result, it is essential to go back to the ruling of the *Morath* case for added context. The Texas Supreme Court, in its verdict, pivoted on early school finance rulings by relying heavily on information from the controversial 1960s Coleman Report (Kauffman, 2017). The Coleman Report determined that family background, not schools, explained the gap in educational achievement between whites and minorities (Hill, 2016). The Coleman Report was used to argue that an increase in funding does not make a difference in public school student outcomes (Kauffman, 2017). In previous cases, the Texas Supreme Court found that educational funding has a real, meaningful impact on students' educational opportunities (Kauffman, 2017). The Texas Supreme Court's

commentary on the Coleman report provides insight into the court's interpretation of funding and equity. In the *Morath* case, the court held that:

> *...differences in achievement among subgroups do not necessarily establish a failure of the school system in its allocation of resources. The Coleman Report…concluded that factors distinguishing the students themselves accounted for vastly larger differences in achievement than differences in the resources provided by the school system. The Plaintiffs concede that economically disadvantaged students face challenges outside the schools that affect their educational achievement, and indeed offered much evidence to the trial court in support of this position. According to the Edgewood Plaintiffs, 'The challenges that economically disadvantaged students face stem largely from the opportunities they have available to them where they live' seems inarguable. Demography is not destiny. Many of our most celebrated achievers-in every walk of life-overcame tough odds to thrive, conquering headwinds galore. But factors outside the classroom play an undeniable role in many children's lives. The Coleman Report, as discussed above, reached the seismic conclusion a half-century ago that family-related variables, for example, matter more-far more-than per-pupil expenditures when it comes to predicting academic success. The Plaintiffs presented much data on achievement gaps of ELL and economically disadvantaged students, but did not prove that those gaps could be eliminated or significantly reduced by allocating a greater share of funding to these groups. Again, as we have recognized, more money does not guarantee better schools or more educated students* (*Morath v Texas Taxpayer et al.*, 2016).

While the Texas Supreme court used harsh criticism when describing the system of funding for all students, they seemed to be disinterested in addressing inequity in the system. The Court claimed that by entertaining each subgroup's claim of inequity could have no end in sight (Kall, 2016). Instead, the Court decided it was not in its authority to take legislative power and make funding adjustments and instead challenged the state to come up with a better funding solution.

This leads back to the result from the first ANOVA. The state legislature responded to the Texas Supreme Court ruling by passing a bill increasing funding for all students in Texas. Since the *Morath* case was brought about on challenges of inadequacy and inequity, the resulting legislative action should have addressed both claims. We can see by the ANOVA analysis that there was, in fact, an increase in funding for students in Texas, which addresses some of the inadequacy claims. While there was an effort made to fix the problem, but it was grossly inadequate, tantamount to putting a band-aid on a bullet wound. In a 2015-2016 report on school funding, Texas was found to be in the bottom third in the nation in fiscal effort, the fourth worst in the nation in terms of adequate funding, and in the bottom third of the US states in terms of progressiveness of funding (Baker et al., 2019). In terms of adequacy, prior to the passage of HB 21, Texas ranked higher only than Arizona, Mississippi, and California in providing funding to reach national averages in student outcomes. According to this report, even if Texas doubled its funding efforts in high-poverty areas, it still would have fallen short of the money required to attain average student outcomes (Baker et al., 2019). To examine how the legislature addressed the claim of inequity in school funding, I will discuss the results and context of the regression analysis.

The regression analysis showed that the state's new level of funding could not be predicted by the districts level of students from poverty. Essentially, a line with a slope of zero would have been a better predictor of school funding than the regression line created. The regression analysis demonstrated that the increase in funding was in no way related to a school district's level of poverty. The efforts by the state legislature in the passage of HB 21 had no statistically significant impact on increasing equity in school funding in Texas. There are many reasons why this might have occurred.

The weak mandate of the Texas Supreme Court allowed the legislature to use their policy wisdom to create a better system (*Morath v Texas Taxpayers et al.,* 2016). The Supreme Court chose to overrule the lower court's ruling on claims of inequity in funding through a series of veiled racist claims while simultaneously stating that the state should do better. The Supreme Court sided with multiple reports, including the often-debunked Coleman Report, that schools had less of an impact on student outcomes than that families (Kauffman, 2017). The Supreme Court also used an unsteady argument that allowing one claim of inequity would subject the state to an infinite amount of claims from every possible subgroup. The Court went on to suggest that Texas should make the system better for all students, not just subgroups. In essence, all students matter. The court argued that since ELL students were also primarily poor, the school districts should consider the multiplicative effect of their resource allocation (Kauffman, 2017). The overall feeling of the ruling of the Texas Supreme Court can be best explained by its interpretation of the requirements of the government:

> *The financial efficiency doctrine requires a rough equality of access to district funding for similar tax effort. Its aim is equality of opportunity, not equality of*

> *results. We have never interpreted our Constitution, under the adequacy requirement, to mandate equality of student achievement by district or student subgroup. Such equality of results may not be possible through changes in school funding alone, given the respected body of educational research holding that school resources account for only a small fraction of differences in student achievement. Equality of educational achievement is a worthy goal of government, and society at large, but it is not a constitutional requirement.* (*Morath v Texas Taxpayers et al.*, 2016)

This inaction at the hands of the Texas Supreme Court allowed the Texas Legislature to pass a bill that the senate claimed would at least provide wealth equalization but, in fact, had no impact on funding for poor students. While the Texas Supreme Court had no problem pointing out that the funding system is inherently bad for students and suggested this was an opportunity for the legislature to address the concerns, they made no meaningful steps toward requiring the legislature to address it.

3.1.11 Limitations

There were a few limitations in this study. The first was that the measurement of poverty presented by Texas was represented by the number of students on free and reduced lunch. That is a self-reported value by families, which requires them to declare their poverty level to be eligible. This value may be under-representative (Fazlul et al., 2023). A value that includes tax returns might be a more accurate measurement of poverty.

This study also focuses directly on larger school districts that cover almost 85% of the students in Texas. Since there was money set aside in HB-21 to support rural

districts, any claims from this study cannot be factored into any evaluation of adequacy and equity in Texas' almost 1000 rural districts. A future study evaluating the impact of HB 21 on rural school districts in Texas could offset this limitation.

Conclusion

Despite the cries of inequity and inadequacy by the citizens and the ruling claiming the system was not suited for Texas children in the 21st century, the Texas legislature's HB 21 did little to address any of the claims. The ANOVA analysis did determine that a slight increase in per pupil funding was achieved, but it amounted to very little in terms of moving Texas towards the appropriate levels of adequacy. Furthermore, the regression analysis demonstrated that the money added had no relationship with poverty levels, indicating that the bill did nothing to address the concerns of inequity.

In evaluating the ruling of the Texas Supreme Court in the *Morath* case, it is difficult not to call upon the idea of interest convergence. Bell's concept of interest convergence suggests that white lawmakers will not hesitate to pass legislation that benefits blacks if that legislation simultaneously supports the white agenda (Bell, 1980). In the earlier Texas Supreme Court rulings, the court accepted that the system was overwhelmingly inadequate for all students (Kauffman, 2017). The resulting pressure put on the Texas legislature, and the subsequent passage of bills, provided more funds for all Texas students. As the court ruled in the *Morath* case, the system had been established in which all schools got "equal" funding, but wealthy schools could get "more equal" funding. If Bell's theory of interest convergence is applied to this ruling, the Texas

Supreme Court would have no interest in forcing any equity measure, as wealthy white schools were already getting what they wanted.

The demographic makeup of the court supports this idea. During the 1995 ruling in *Edgewood IV*, the court was made up of four Democrats and five Republicans. There were two white females on the court, one Hispanic male, and six white males. By the 2016 *Morath* ruling, the court was made up entirely of Republicans. The court consisted of one Hispanic female, one white female, and seven white males. As Black and Hispanic Texans were underrepresented at the Supreme Court level, it is no surprise that there was little action to push legislators to act on their behalf.

A critical evaluation of the *Morath* ruling and the legislative action that followed could lead to many different interpretations. A generous evaluation of the Court and elected officials would suggest at best an indifference toward marginalized Texans and their educational outcomes. A more realistic claim would be that the Texas Supreme Court's ruling and HB 21 are textbook examples of systematic racism and classism.

Overall, the statistical analysis of the results of Texas HB 21 demonstrates how little the bill actually did to improve education for Texas students. New legislation was passed in 2019, and another bill is currently being debated to increase teacher pay. As that funding data becomes available, it would be valuable to revisit this analysis to see if further efforts to improve school funding in Texas were fruitful.

This chapter demonstrates that there was a small effort to increase adequacy in Texas education funding with the passage of HB 21. However, inequity remains. One possible explanation for this could be the inclusion of attendance as a factor in calculating how much money is allocated to each district. The next chapter will explore the

association between the variables of attendance, poverty, and school funding in Texas with the goal of identifying one possible explanation for the inequity in school funding in Texas.

CHAPTER 4. EXPLORING THE DISCRIMINATORY EFFECTS OF ATTENDANCE-BASED FUNDING IN TEXAS: A QUANTCRIT ANALYSIS OF THE ASSOCIATION BETWEEN ATTENDANCE, POVERTY, AND SCHOOL FUNDING

Introduction

Issues of inequity in school funding are pervasive in the United States (Allegretto et al., 2022; Simon, 2021; Southern Poverty Law Center, 2021). States such as Texas are denying students access to well-funded, well-resourced schools (Southern Poverty Law Center, 2021). Without access to a quality education, these students remain stuck in a cycle of poverty, segregation, and limited opportunities for upward mobility (Sablich, 2016; Southern Poverty Law Center, 2021).

Well-funded schools, defined as schools that can hire quality teachers and support staff, fund academic programs, and provide the needed services for students (Southern Poverty Law Center, 2021), are fundamental to providing opportunities for students to meet state academic standards and prepare them to be for post-secondary learning or the workforce. School districts that support a higher number of students from poverty need additional funds to support the costs associated with educating children from an economically disadvantaged area (Allegretto et al., 2022; Southern Poverty Law Center, 2021). It is simply not enough that everyone gets the same level of funding.

As of 2019, Texas finances its education system regressively. This means that low-income schools are funded at a rate 7% to 12% lower than moderate to high-income schools (Baker, 2014; Farrie et al., 2019). With 20% of Texas P-12 students classified as

in poverty, it is vital to explore how the current funding model is associated with Texas' low-income students (Farrie et al., 2019).

4.1.1 Background

There are many different issues concerning Texas' system of school funding. Texas ranks poorly in terms of school funding compared to other states in the United States. According to a report by the National Education Association (NEA), Texas ranks 41st in the nation for per-pupil spending on public education. The NEA report shows that Texas spent an average of $11,980 per student in the 2019-2020 school year, which is well below the national average of $14,108 per student (NEA, 2021). A report by the Center on Budget and Policy Priorities shows that Texas has reduced per-student funding by 7.2% since 2008, after adjusting for inflation (Leachman et al., 2017). This gap in funding means that Texas schools have fewer resources to support students, such as fewer textbooks, outdated technology, and fewer extracurricular activities.

Furthermore, Texas's school funding system has been criticized for its overreliance on local property taxes. The Texas Education Agency reports that in the 2020-2021 school year, local property taxes accounted for 57% of public-school funding, while the state contributed 43% (TEA, 2021). This means that school funding is heavily dependent on the wealth of local communities, which can result in significant funding disparities between rich and poor districts. The utilization of property tax funding has been a hot topic for Texas politicians in recent years. Measures were taken in 2021 to reduce the property tax burden on homeowners through a compression and talks of further reductions and different funding measures were heavily discussed in the 2022 gubernatorial race and continue to be discussed in the legislature (Fechter, 2022).

Exacerbating the funding gap is the use of attendance in school finance calculations. As of 2022, Texas is one of seven states in the United States that still uses attendance as a variable in their school district funding calculations (Lafortune & Herrera, 2022). States that use attendance-based models rather than enrollment-based ones provide funding only for the days students are present. States that prioritize attendance do so in part due to research that suggests that an increase in attendance is associated with increased student outcomes (Ely & Fermanich, 2013). However, states that provide attendance-based funding to school districts risk possible equity effects demonstrated by research that shows an association between attendance and income (Ely & Fermanich, 2013). The Texas education agency released a report on absenteeism and academic accountability in which they made three claims. The first was that students who attend school regularly have better outcomes. The second, bolded statement, was that schools can influence and improve their own attendance rates. The last claim was that schools should be held accountable for students who are not attending school (TEA, n.d.).

While there are many different factors that may play into the funding disparity in Texas education such as property values, elimination of the ability to implement a state property tax, and the reduction in state funding effort, I will focus this study on exploring the relationship between the three variables of attendance, poverty, and school funding in Texas.

Literature Review

4.1.2 The Association Between Attendance and Poverty

School absences often do not reflect a choice by families, but rather necessary family decisions or circumstances beyond their control. However, the prevailing assumption is that school absenteeism is a choice (Baker, 2014). In practice, many reasons reduce the ability of a student from poverty to get to school. Students from poverty may experience sub-standard housing, increased pollution-related illnesses including asthma, limited health care, food insecurity, and greater exposure to violence (Bowen et al., 2016). Those same students may also experience transportation difficulties, homelessness, and have no safe path to travel to school (Bowen et al., 2016). Garcia and Weiss (2018) included parents' non-standard work schedules, changes in household composition, residential mobility, and extensive family responsibilities in addition to the factors described by Bowen et al. (2016). The poverty-related experiences described are not all-inclusive, and not every student from poverty will experience each one of these hurdles to attending school. Individually, any one of these experiences may impede a student from attending school. If a student experiences many of these factors collectively, they would be expected to have a more difficult time attending school than a peer without these hardships. Little data exists on how or why absence rates correlate to poverty, so it is difficult to speculate on what aspect of poverty has the most significant impact on student attendance (Baker, 2014). However, plenty of evidence supports the association between increased absenteeism and poverty.

4.1.2.1 The Rate of Absenteeism in Students from Poverty

Many researchers and organizations have collected and analyzed quantitative data on student poverty levels and absenteeism. Overwhelmingly, the data suggests that students who experience poverty miss school more than their peers. The Economic Policy Institute (2018) found that students who qualified for free and reduced-price lunch (FRLP), an indicator of poverty, were almost eight percent more likely to miss more than three days of school than their non-FRLP peers. That same study showed that students who missed more than ten school days were twice as likely to be on FRLP (García & Weiss, 2018). A National Health Interview Survey found that compared to their non-poor peers, students from poverty are more likely to have obesity (86%), developmental delays (22%), learning disabilities (73%), and asthma (34-47%) (Baker, 2014). Those factors are all associated with much lower rates of attendance. A student with one of those factors has a 1.73 to 3.30 higher chance of missing more than ten days of school versus their peers without those conditions (Baker, 2014). A similar study of almost 100,000 students outlining the relationship between poverty, obesity, and school attendance showed that children living in poor households had a higher chance of missing school (Echeverría et al., 2014). Students with a household income of less than 200% of the Federal Poverty Level (FPL) had the highest percentage of school absences (Echeverría et al., 2014). The analysis of data from the Office of Civil Rights, the Census Bureau, and the National Center for Educational Statistics demonstrated a linear correlation between poverty levels and attendance (Bowen et al., 2016). Finally, chronic absenteeism, defined by students who miss more than 15 days of school for any reason, is primarily concentrated in areas that serve students from poverty (Bowen et al., 2016). The areas with the largest chronic absenteeism rates are closely associated with inter-generational poverty and housing

segregation and can include rural and urban areas (Bowen et al., 2016). Like other campus issues, schools have been approaching attendance with intervention and improvement programs. However, these programs have demonstrated little effectiveness in increasing student attendance.

4.1.2.2 How Much Influence do Schools Have Over Attendance?

Schools of like demographics have remarkably similar attendance rates regardless of district-specific policies (Knight & Olofson, 2018). It might be hard for schools to create targeted interventions to increase attendance since each student's experience of poverty may present different challenges to the students. Even with the implementation of broad interventions to support school attendance such as transportation and attendance policies, districts only account for 0.03% to 1.05% of the total variation in student attendance when accounting for student demographics (Knight & Olofson, 2018). Even an increase from the 50th to the 90th percentile in district effectiveness on value-added to student attendance would only increase the school's attendance rate by 0.32% or approximately 0.58 days (Knight & Olofson, 2018).

Given the positive association attendance has with student outcomes, it is understandable that states are looking at attendance-based funding measures as an incentive for schools to implement any type of program that increases student attendance. States have claimed that incentive-based funding has been shown to increase school attendance (Ely & Fermanich, 2013). However, there are some significant caveats to that claim. The positive association between incentive-based school funding based on average daily attendance and attendance rate is generalized across all students. This means that

specific subsets of students may not have the same experiences as the population as a whole. While this policy may increase attendance among wealthy white students or students who would otherwise have few hurdles in attending school, there has been little evidence that it increases attendance for minority students or those in poverty (Ely & Fermanich, 2013). In fact, the reduction in funds to areas with high-poverty students may impede district progress on improving attendance, locking them in a cycle of funding loss (Ely & Fermanich, 2013). As attendance directly relates to school funding in Texas, that model must also be explored.

4.1.3 The Association Between Attendance and Funding

Texas funds schools on an average daily attendance (ADA) model. This model ties funding directly to student attendance. Attendance is taken daily at each campus across a district. Those numbers are aggregated at the district office and tracked throughout the year. At the end of the year, the district provides a percentage of their students who were in attendance to the state. The state takes that number and multiplies it by a district's weighted average daily attendance (WADA) number. WADA accounts for demographic markers that the state has determined should receive extra funding. Some examples of these markers are at risk of not graduating, English learner status, and special education status. The more markers a student has, the higher their WADA number. The WADA number is multiplied by the attendance percentage. That value is then multiplied by the basic allotment ($6160 per student in 2022), which provides the level of funding for schools. Based on the multiplicative relationship between attendance and funding, any drop in attendance will negatively impact funding.

4.1.3.1 Examples of Funding Calculations

In 2022, Texas increased the basic allotment for schools to $6,160. This means that, at minimum, each student enrolled has an annual value of $6,160 for a school. In practice, that figure varies wildly and is due to a several factors. The first is the WADA way in which schools calculate their WADA number. Schools have many opportunities to generate WADA money. The more demographic labels ascribed to a student (low income, special education, gifted and talented, etc.) the more revenue for the school based on the WADA formula. The second is that school districts can tax locally at a higher rate and keep some of that money for their district. This level of funding is known as a *district golden and copper pennies*. These taxation laws allow for districts to add additional taxes to their communities that are not subject to recapture by the state. Since these types of funding are not directly related to my study, I will not include those in my examples. If a hypothetical school district has 20,000 students who are all at school 100% of the year, that district will generate at minimum $123,200,000. In practice, a school might have an attendance rate of around 95%. In this example, each percentage point lower a district has in attendance is associated with a drop in funding of $1,232,000. Even with this elementary example, the effect of a slight decrease in attendance can clearly be seen. As WADA enters the equation, the impact of drops in attendance can be amplified.

4.1.3.2 WADA Calculations in Funding

WADA can amplify the impact attendance has on school funding. Weighted school funding is a system of allocating education funding based on the needs of individual students, rather than a simple per-student funding formula. This approach recognizes that some students require additional resources and support to succeed academically, and thus, provides extra funding to schools serving disadvantaged students.

The state of Texas has implemented a weighted school funding formula to ensure that schools with high concentrations of economically disadvantaged students receive additional resources to help close the achievement gap.

Under the WADA system, schools serving a higher percentage of disadvantaged students receive more funding than schools with a lower percentage of disadvantaged students. This approach recognizes that schools serving disadvantaged students face additional challenges, including higher rates of poverty, language barriers, and learning disabilities. These schools require additional resources and support to provide an equitable education to all students (Cortez, 2009).

The WADA system is intended to promote equity in education funding by directing additional resources to schools serving students with the greatest needs. The system also aims to ensure that schools with a high concentration of disadvantaged students are not penalized for factors beyond their control, such as poverty rates in their community (Cortez, 2009).

Despite its benefits, the WADA system has faced criticism in Texas. Some argue that the formula is too complex, making it difficult for districts to predict their funding levels accurately. Others argue that the formula does not provide enough funding to schools serving economically disadvantaged students, especially considering recent budget cuts to education in Texas (Poppe, 2017).

If that same hypothetical school district from the previous example was two school districts that served different demographics, the amount of funding reduction would be different. School district A is an upper-middle-class suburban district. Due to their demographics, the WADA number calculated for the district is 1.012. School

district B has a high percentage of English learners, students from poverty, and special education students. School district B has a WADA of 1.3. For every one-point drop in attendance for school district A, the district loses $1,246,784. For every one-point drop in attendance for school district B, the district loses $1,601,600. The difference in funding loss between the schools, with all other things being equal, is $345,816. Therefore, the school that serves more students with higher needs will be more negatively affected by a drop in attendance than a school with fewer students with higher needs.

4.1.3.3 Practical Implications of the ADA Model on School Funding

The attendance-based model underfunds the state mandate of providing an education for all enrolled students. Schools must plan on serving 100% of their students every day. While there are likely to be variations in attendance throughout the year, all students are likely to attend at some point in the year (Baker, 2014). This requires schools have materials, supplies, staff, and resources for 100% of their enrollment, even if only 90% show up on a given day. Essentially, the school must spend and prepare to be at 100% of its capacity, while the funding from the state will almost certainly be less than that based on attendance. The variability underfunds schools and makes the end-of-year revenue entirely unknowable for the district officials planning their budgets.

The ADA model creates uncertainty for district officials planning a school budget. District officials often prepare multiple different budgets with the help of demographers. These budgets work on a prediction of funds available for the district. A single-point error in predicting attendance rates could put large districts considerably over or under budget. Mid-year variations in attendance and enrollment complicate the budgeting

process. Districts that serve more students in an urban or high-poverty setting tend to have greater variations in attendance and enrollment based on housing insecurity and employment mobility (Baker, 2014). These fluctuations have had an underfunding effect on school district and state education budgets.

Pre-pandemic, Texas had a state-wide attendance rate of 95.7%. With the ADA funding model, this meant that about 260,000 of Texas' 5.4 million students were not funded (TEA, 2018). Based on the daily rate of $6,160, at minimum, over $1.6 billion was withheld from Texas public schools. Since the COVID-19 pandemic, schools are experiencing decreased attendance. Pflugerville ISD had a pre-pandemic attendance rate of 94% that dropped to 91% by 2022. This drop cost the district millions of dollars in funding (Lopez, 2023). An enrollment-based model would eliminate that loss of funds but comes with different concerns.

4.1.3.4 Enrollment-Based Model of School Funding

Most states have adopted a school funding model based on some sort of enrollment statistic rather than attendance. States with these models either take average enrollment, snapshots of enrollment, or one-day enrollment numbers to calculate the school funding. In practice, this eliminates much of the variability seen in funding through the ADA model and provides a predictable income stream (Villanueva, 2022). Proponents of this model also argue that it grants greater equity to school districts (Ely & Fermanich, 2013).

However, with greater equity comes the concern of a reduction in funding to less needy schools. If the state budget remained the same, and the model did change, revenues would shift away from wealthy districts towards low-income districts. Not everyone is

agreeable to this outcome (Baker, 2014). This redistribution of funding was such a concern that when New Jersey shifted to an enrollment-based model, they purposefully added changes to the funding formula that redirected newly created funding away from high-poverty districts towards lower-poverty ones (Baker, 2014).

Despite the many layers to school funding in Texas, the current model relies on a direct multiplicative relationship between attendance and the per-pupil rate. Any drop in attendance for a school district will reduce the funding. More importantly, with the WADA multipliers, the reduction in attendance is more impactful for districts that serve students with higher needs, including our high-poverty students.

4.1.4 The Association Between Poverty and Funding

4.1.4.1 Poverty and School Funding Nationally

Many researchers have quantitatively analyzed different states and their funding systems. In *Is School Funding Fair? A National Report Card,* Baker et al. (2018) state, "Student poverty is the most critical variable affecting funding levels and can serve as a proxy for other measures of disadvantage, such as racial segregation limited English proficiency, and student mobility" (p. 2). In that same report, only eleven states in the United States progressively funded education. Twenty states' funding distributions were flat, meaning there was no significant difference between funding for wealthy and high-poverty areas. Seventeen states were found to fund their education system regressively. California, Illinois, Missouri, and Texas all show a pattern of reduction in funding to schools dependent on the level of poverty associated with them. Texas showed the

greatest difference between its wealthiest and poorest districts, with a 3.1% loss in funding between the highest and lowest quintiles of poverty.

4.1.4.2 Poverty and School Funding in Texas

Texas ranks poorly in most measures of school funding. In fairness (a measure of funding level, distribution, fiscal effort, and coverage), Texas ranks 39th in the nation (Baker et al., 2018). As of 2015, the ratio of funding for high-poverty to low-poverty districts in Texas was 93%, placing it firmly in a regressive funding system category. Specifically, Knight and Olofson (2018) found that due to ADA funding, the more poverty the school experienced, the less funding it received. The difference between the first quintile (low poverty) and the fifth quintile (highest poverty) was a 2.1% loss in funding for the poorest schools based on the funding model. The WADA/ADA model employed by Texas results in greater losses in funding for schools that support students in poverty. McAllen ISD, a low-income border community lost $6.7 million due to attendance in 2022 (Lopez, 2023). In 2015, Edgewood ISD, a high-poverty school district near to San Antonio, Texas, lost $1,025 per student, which was roughly 11% of its total operating budget due to the combination of its high WADA number and low attendance. A neighboring low-poverty district Alamo Heights only lost 4.7% of its total funding based on its attendance rate and WADA number (Knight & Olofson, 2018).

4.1.4.3 The Association Between Poverty and a Reduction in Funding

For many years, experts in education policy have acknowledged that funding based on attendance rates often results in reduced funding for schools located in high-

poverty areas. Despite this recognition, recent fiscal pressures on states and their school funding systems have led policymakers to implement such measures without much consideration for the needs of children in these districts (Baker, 2014). Lawmakers in Washington State attempted to switch to attendance-based funding but were unsuccessful. Similarly, officials in New Jersey introduced an "attendance factor" to their state school funding formula, which lowered aid for at-risk students below the levels established by the state's School Funding Reform Act of 2008 (Baker, 2014). There is little empirical evidence that attendance-based financing is an effective incentive (Baker, 2014). Currently, Texas is exploring an enrollment-based model of school funding in part due to the punitive nature of the policy and lack of measurable beneficial outcomes (Lopez, 2023). However, it is unlikely that it will have the level of support to become a law. There are many ways to explore the real effects of these policies on student funding levels.

As demonstrated in the example above, schools that support more students with higher needs such as students that live in an area of high poverty, are hit harder by the reduction in funds due to attendance than wealthier schools. Mathematically this makes sense. A hypothetical reduction of five percent of $14000 per pupil will be more than a reduction of five percent of $10000 per pupil. In his paper exploring how financial penalties for school absences hurt districts serving low-income, chronically ill students Dr. Bruce Baker was able to demonstrate similar outcomes. His calculations suggested that using attendance in the funding calculation cost a hypothetical 10,000 student high-need school district $758 per pupil versus only $44 per pupil for a wealthier 10,000 student district (Baker, 2014).

While these values demonstrate the potential for inequity in funding based on the use of attendance as a measure in funding, they are absent of any context. By using QuantCrit as a theoretical framework, any inequity in funding discovered through quantitative analysis can be dissected and discussed through a critical lens.

Theoretical Framework

QuantCrit is an emerging approach that takes the main ideas of Critical Race Theory (CRT) and applies them to improve statistical data analysis (Castillo & Gillborn, 2022). QuantCrit attempts to align a traditionally qualitative lens of CRT to quantitative studies (Castillo & Gillborn, 2022). QuantCrit provides quantitative researchers with an easy entry point to applying what may seem like antithetical tenants of CRT to statistical approaches. In 2007, the term quantitative criticalist was used by Francis Stage to describe a researcher who used quantitative methods to evaluate systemic inequalities in educational processes and outcomes (Sablan, 2019). Moving forward almost a decade, QuantCrit has been formalized into a theoretical and methodological framework rooted in CRT in which quantitative studies can be framed.

QuantCrit formally emerged in a paper by Gillborn et al. in 2018 titled *QuantCrit: Education, Policy, 'Big Data' and Principles for a Critical Race Theory of Statistics.* Gillborn et al. (2018) stated that the goal of QuantCrit was not to create a new branch of CRT but rather a toolkit that emphasizes the need to utilize a CRT framework in quantitative studies. With this in mind, the five tenants of CRT were taken and adapted to create five principles of QuantCrit. The principles are the centrality of racism, that numbers are not inherently neutral, racial constructs are not natural, data can't speak for

itself, and that numbers can be used for social justice (Gillborn et al., 2018). Some of these principles closely mirror CRT's, while others lean specifically into a quantitative methodology. Simply put, QuantCrit allows for the researcher to consider the context surrounding the problem and use that context to frame the resulting discussion.

Research Methods

I chose a series of linear regressions to evaluate the association between the variables of poverty, attendance, and school funding in Texas. Linear regression analysis was initially conceptualized through Galton and Pearson's work studying the genetic inheritance of sweet peas (Stanton, 2001). By 1896, Pearson had published his first work on regression and correlation (Stanton, 2001). Linear regression is a statistical method for exploring the association of variables. The goal of linear regression is to develop a mathematical equation that can predict the value of the dependent variable based on the value of the independent variable. (Sykes, 1993). There are many ways a linear regression equation can be written, but they all essentially contain the same parts. In a simple regression, the equation includes a dependent variable, a constant for when the interaction is 0 (in some courses, this is also described as the intercept), the correlation coefficient, and the error term (Sykes, 1993). A simple example of this equation is

$$y=\beta_0+\beta_1 X + \varepsilon$$

where y is the dependent variable, β_0 is the intercept, $\beta_1$is the correlation coefficient, X is the value of the independent variable, and ε is the error term.

4.1.5 Sample

The sample in this study began as all publicly funded schools in Texas. This initial sample included 8,759 schools from 1200 different school districts and educational entities sourced from the Texas Education Agency School Snapshot 2018 data. I chose the 2018 data because it was the most recent available without the influence of the COVID-19 pandemic. This public data source includes 137 different measures for school districts in Texas including values for measuring poverty, attendance, and per-pupil funding. I eliminated the charter and non-traditional schools (such as juvenile justice) as they are funded differently than traditional public schools. When I eliminated the 179 non-traditional public schools from my data set, I was left with 1021 school districts. From here, I eliminated all districts with an enrollment of fewer than 2000 students for the entire district since these schools receive additional funding per pupil that would not align with the study's purpose. This left me with 327 school districts. While this sample only represents 27% of the total school districts in Texas, it accounts for just over 85% of the more than 5 million students Texas educates every year. The last step I took in cleaning the data was in removing federal funding from the per-pupil funding measure provided by the data set. I did this because federal funding in education is meant to support not supplant the funding for educational opportunities for low-income school districts. Since I am evaluating the effort made to fund schools in Texas, it would be inappropriate to consider additional funds granted by the federal government in these calculations.

The following operational definitions can be utilized to describe the variables.

Attendance (Attd): The percentage of students that were marked present during a certain point in the day across a district for an entire year.

EcoDis (EcoDis): Economically disadvantaged can be described as the percentage of students in a school district that are classified as receiving free or reduced lunch services, a measure of poverty.

Per-pupil funding (Fund): Per-pupil funding is the amount of state and local dollars the school district received divided by their enrollment.

4.1.6 Hypothesis 1: Poverty Can be Predicted by Attendance

My first hypothesis is that poverty is associated with attendance in schools. I evaluated this hypothesis as above using a simple linear regression analysis in SPSS. The model for this regression is:

$$attd = \beta_0 + \beta EcoDis + \varepsilon$$

4.1.7 Hypothesis 2: Attendance Can be Predicted by School Funding

My second hypothesis is that attendance is associated with school funding in Texas. In order to evaluate this hypothesis, I ran a regression in SPSS on the two variables of attendance and per pupil funding. The model for this regression is:

$$fund = B_0 + Battd + \varepsilon$$

4.1.8 Hypothesis 3: Poverty Can be Predicted by School Funding

My third hypothesis is that poverty predicts school funding in Texas. Again, the variables of EcoDis and per-pupil funding were entered into SPSS for a linear regression analysis. The mode for this regression is:

$$\text{fund} = B_0 + Becodis + \varepsilon$$

4.1.9 Hypothesis 4: Loss of Funding Can be Predicted by Poverty

The data resulting from the SPSS linear regression analysis did not explain as much of the relationship as would have been expected. This is due to the nature of school funding. Schools from poverty *should* be receiving more per-pupil funding than their wealthier counterparts. When the data is evaluated through a linear regression, there is a limited relationship between the variables. What was produced is a situation where the data set seems homogenous when in fact it should be linear. The reduction in funds that should be supporting schools from poverty ends up providing equality, not equity. A casual quantitative analysis might dismiss this data set as irrelevant due to the values produced. However, by leveraging QuantCrit as a framework I was able to dive deeper into the context of the data set. School districts' funding should be allocated equitably (or adequately) rather than equally. Therefore, a better measure of the effect that attendance has on funding would be to evaluate the per-pupil funding lost due to attendance. There are many ways this could be done but I chose to trim the data using simple algebraic logic. I created two new variables called enrollment revenue (enrollrev) and revenue lost due to attendance (revlost). The algebraic model is enrollrev=fund/attd. From here I subtracted per-pupil funding from enrollment revenue to get revenue lost. The model for this is enrollrev-fund=revlost. This new variable of revlost accurately measures the amount of funding lost due to attendance. This model is not unlike previous models leveraged by other scholars such as Baker (2014). My final hypothesis became poverty is associated with school funding lost due to attendance in Texas. This data was also evaluated in SPSS using linear regression analysis. The resulting model is:

revlost= B_0+$Becodis$+ε

Results

4.1.10 Hypothesis 1: Poverty and Attendance

A standard simple regression analysis was performed between the dependent variable of attendance and the independent variable of EcoDis to answer the first hypothesis. The analysis was performed using SPSS regression. All of the assumptions for linear regression were met for this analysis. Regression analysis revealed that the model is a moderate predictor for attendance. For the model, F (1,325) = 136.133, p <.001, R^2 for the model was .295, and adjusted R^2 was .293. The unstandardized regression coefficient, intercept, and standardized regression coefficient can be seen on Table 4.

Table 4. Regression Results for EcoDis and Attendance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	96.685	.130		744.297	<.001
	STUDENTS: % ECONOMICALLY DISADVANTAGED	-.024	.002	-.543	-11.668	<.001

[a.] Dependent Variable: ATTENDANCE RATE (2017-18)

4.1.11 Hypothesis 2: Attendance and School Funding

To examine my second hypothesis, I used SPSS regression to conduct a standard simple regression analysis was between school funding as the dependent variable and attendance as the independent variable. All of the assumptions for linear regression were met for this analysis. The results showed the model did not accurately predict school funding. The model's F value was 9.662 with 1, 325 degrees of freedom. The model had a p-value of .002. The R^2 value was 0.29 while the adjusted R^2 was .026. Table 5 displays the unstandardized regression coefficient, intercept, and standardized regression coefficient.

Table 5. Regression Results for Attendance and Per-Pupil Funding

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	26217.088	5623.185		4.662	<.001
	ATTENDANCE RATE (2017-18)	-183.482	59.027	-.170	-3.108	.002

[a.] Dependent Variable: perpupilfund

4.1.12 Hypothesis 3: Poverty and School Funding

The third regression analysis was designed to test whether a relationship existed between poverty level in school funding. To accomplish this, a standard simple regression analysis was performed between the dependent variable of school funding and the independent variable of EcoDis. The analysis was performed using SPSS regression. All of the assumptions for linear regression were met for this analysis. Regression analysis revealed that the model does not adequately predict school funding. For the model, $F(1,325) = 10.819$, $p < 0.001$, R^2 for the model was .032, and adjusted R^2 was .029. The unstandardized regression coefficient, intercept, and standardized regression coefficient can be seen on Table 6.

Table 6. Regression Results for EcoDis and Per-Pupil Funding

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8230.260	164.372		50.071	<.001
	STUDENTS: % ECONOMICALLY DISADVANTAGED	8.516	2.589	.179	3.289	.001

[a.] Dependent Variable: perpupilfund

4.1.13 Hypothesis 4: Poverty and School Funding Lost Due to Attendance

My final linear regression analysis was conducted to examine if there was a relationship between school funding lost due to attendance and the school district's percentage of students classified as Eco-Dis. To create the variable of school funding lost, I subtracted the funds a school received from the funding they would have got with a hypothetical attendance rate of 100%. A standard simple regression analysis was performed between the dependent variable of school funding lost due to attendance and the independent variable of EcoDis. The analysis was performed using SPSS regression. All of the assumptions for linear regression were satisfied for this analysis. Regression analysis revealed that the model significantly predicts school funding loss. For the model, $F(1,325) = 602.038$, $p < 0.001$, R^2 for the model was .649, and adjusted R^2 was .648. The unstandardized regression coefficient, intercept, and standardized regression coefficient can be seen on Table 7.

Table 7. Regression Results for EcoDis and Revenue Lost Per-Pupil

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	49.884	41.842		1.192	.234
	STUDENTS: % ECONOMICALLY DISADVANTAGED	16.171	.659	.806	24.536	<.001

[a.] Dependent Variable: revenue lost due to attendance measure per pupil

Discussion

QuantCrit was a valuable framework for evaluating the results of the linear regressions. QuantCrit seeks to challenge traditional quantitative research approaches that often ignore the influence of race and ethnicity on social phenomena.

To an untrained eye, the findings of the first three hypotheses may yield nothing of interest. In fact, results from hypothesis three could be used to make the argument that poverty is not associated with funding in Texas. The power of QuantCrit lies in the counter storytelling. Without a narrative for the marginalized population of interest to the study, the impact on that specific demographic may be statistically overlooked. Below, I will provide context for each of the hypotheses as well as a potential explanation for the somewhat counterintuitive results the regressions produced.

4.1.14 Hypothesis 1: Poverty and Attendance

The resulting data from this hypothesis was more statistically relevant than hypotheses two and three. The unstandardized B for this data can be interpreted as for every one unit increase in EcoDis status for a school district, we can expect a 0.024 point reduction in attendance. Superficially, this would seem like a small, inverse relationship between poverty and attendance. It is important to note, however, that the entire spread of attendance values in this data set is from 91.6 to 97.0. This means that this model predicts that a school with 100% of their students labeled EcoDis would have an attendance rate 2.4 points lower than a school with 0% of their students labeled as EcoDis. Each percentage point drop in attendance can cost a school district millions of dollars in funding. The average enrollment of school districts in this data set is 14,129.75 students.

This means that we could predict that the average school in this data set with 100% EcoDis status would lose 339 students worth of funding annually due to absences. At the bare minimum basic allotment of funding set at $6160 per student in Texas the value of this loss in attendance can be calculated to be $2,088,240 for an average school district with 100% poverty. Even a school with only half of their students labeled as EcoDis could be predicted to lose over a million dollars annually due to absences. Texas self-reported state-wide attendance rate hovers around 92.7% in 2018 (TEA, 20222.) The school year that ended in 2022 had a statewide attendance rate of 89.30% resulting in a loss of 4,605,176 students worth of funding for the state. That amount of student funding is greater than the enrollment of many individual states including Maine, New Hampshire, South Dakota, North Dakota, Vermont, West Virginia, Montana, Delaware, Hawaii, and Wyoming.

4.1.15 Hypothesis 2: Attendance and School Funding

This model produced some of the most unexpected results of this study. Since the funding formula in Texas is *attendance x funding allotment = actual funding*, an expectation would be a direct relationship between a lower value of attendance and actual funding. However, the output contradicts that thinking. The unstandardized B value for this regression can be interpreted as for every 1 unit increase in attendance, a school will *lose* $183.48 in funding. This unstandardized beta is counterintuitive to the attendance model. Problematically, this model assumes a school could have an attendance of 0 and sets the intercept at 26,217 which is a level of funding not received by a school in the data. An examination of the scatter plot does suggest there is a slight inverse relationship between the data. The explanation for this could be that schools with higher attendance

could be predicted to have lower levels of EcoDis students (as seen above). Since these schools are funded at a slightly lower rate than those that support a high number of EcoDis students we could expect that schools with higher attendance may have less funding based on the WADA model.

4.1.16 Hypothesis 3: Poverty and School Funding

This hypothesis gets to the heart of the question of equity in school funding. Is there an association between poverty and school funding in Texas? A look at the per-pupil funding measure and EcoDis percentage regressions suggest that there is a positive relationship between poverty and school funding. The unstandardized B can be interpreted as for every one unit increase in EcoDis status we can predict an increase in funding of $8.52 per pupil. That means that a school with 100% of its students labeled as EcoDis would have $852 more per pupil than a school with 0% of its population labeled as EcoDis. To break down this number, there first must be an understanding of the idea of adequacy in school funding. Baker et al. (2021) describe adequacy as the amount of money a state should spend on education to achieve average educational outcomes. They further operationalized adequacy as "whether states provided sufficient resources to districts, relative to common outcome goals" (p.11). The goal of studying adequacy is to understand if current levels of funding are enough. The calculations of adequacy are based on the National Education Cost Model and while far from perfect, provide a reasonable estimate of what a state should be spending to achieve median student outcomes. In this study, Texas ranked third from last in terms of adequacy. In their highest poverty districts, Texas is estimated to spend at a rate 47.8% below the level of adequacy versus 11% for its least poor districts. Moreover, nationwide, Black and

Hispanic students are almost twice as likely to attend a school with below-adequate funding (Baker et al., 2021) So while the linear regression can be correctly interpreted that students who are labeled as EcoDis do receive more money per pupil, it can be argued that that number is woefully inadequate. The model of adequacy presented by Baker et al. reinforces the idea that $8.52 per pupil is not nearly enough to support the resources needed to provide an equitable education to Texas' students from poverty.

4.1.17 Hypothesis 4: Poverty and Loss of School Funding

The final model produced the most significant results. The combining of the variables of attendance and funding, consistent with similar methodological approaches by quantitative scientists in policy research, netted a model that accounted for 65% of the variation between the variables. This model can be interpreted as for every 1 percent increase seen in a school districts EcoDis population, we can predict that the school district will lose $16.17 per pupil in funding due to attendance. In other words, if there was a model based on enrollment instead of attendance, those school districts would gain back $16.17 per pupil per increase in poverty. While it may seem small, the effects of the loss in funding can be more easily demonstrated when we refer to the previous hypothetical schools. The hypothetical 20,000 person school district that had one percent of its students labeled as EcoDis would lose $323,400 in funding for a school year due to attendance. If that same school district had an EcoDis rate of 50%, they would be expected to lose $16,170,000 in funding. For a school district where all its students are labeled as EcoDis, they would be expected to lose $32,340,000 in funding due to attendance. It is important to note that the bare minimum a school district with 20,000 students would receive in funding is $123,200,000. On average, that number is closer to

$197,420,000 based on the average of $9,871 per pupil funding in Texas in 2021 effected by WADA. This result is in alignment with studies from authors such as Baker, Olofson, and Knight.

This model also demonstrates the punitive nature of the funding policy. While there are some claims, including those of TEA, that schools can force students to come to school, there is no empirical evidence that schools can meaningfully influence student attendance (TEA, n.d.; Baker, 2014; Knight & Olofson, 2018). The current school finance policy of the state of Texas reduces the funding for school districts that serve a higher proportion of EcoDis students more than wealthier school districts.

Conclusion

Every legislative year, Texas seems as if it is at a critical junction for education funding. Previous legislative sessions have been focused on solving the problems of the many lawsuits Texas has faced over the past forty years. This year, Texas is unencumbered by lawsuits, and flush with cash. As of July 2022, Texas is still sitting on over two-thirds of its $18 billion in COVID funding (Lopez, 2023). Furthermore, Texas has taken in a record $32.7 billion tax surplus this year (Lopez, 2023). With these funds in mind, Texas HB 31 has been introduced that would change the funding formula to enrollment based rather than attendance based. The state has suggested this change would cost around $6 billion annually (Lopez, 2023). While being questioned about changing the funding formula, Education Commissioner Morath said that while enrollment makes the model more predictable and stable for districts, there becomes no incentive for schools to track down chronically absent students. Support for this bill seems to be

closely aligned to political affiliation. Representatives of primarily minority districts or urban areas seem keen on the change while white suburban representatives prefer the punitive action on attendance including recriminalizing truancy (Lopez, 2023).

A critical examination of the use of attendance in funding would suggest that the inclusion of that metric as a part of allocating resources serves as a hidden proxy for systematic racism and classism. A casual observer might not see the idea of a punitive approach for school attendance as inherently racist or classist. The idea that the state is generously holding up its constitutional obligation to provide a generally diffusion of knowledge to Texas children and all it requires is that Texas school children attend dismisses generations of systematic racism and segregation that continues to place undue burden on Texas children. The evidence of the statistical analysis demonstrates that the metric of attendance is punishing communities for being poor. This is not to say that Texas should not make every available effort to support students being in schools. Quite the opposite. Texas should be spending more money to support education access in these communities. There can be no denying that a policy, which systematically withholds funds from poor and minority areas while maintaining the status quo for wealthy white schools, is discriminatory.

CHAPTER 5. DISCUSSION

The preceding three articles were designed to investigate discriminatory practices in education funding. Most importantly, my goal was to provide an analysis that went beyond the presentation of mere numbers and enable a critical look at the issue of inequity in Texas school funding.

Findings

The first article, a systematic literature review of the growth and utilization of QuantCrit as a theoretical framework, demonstrated that the use of that theory was growing but was limited in its scope regarding the field of study. This systematic literature review led to more questions about the dispersion of theoretical frameworks in academia. A pattern emerged from the data suggesting the initial application of this framework in fields was limited to either an argument for the use of QuantCrit or a demonstration of its value and best practices. Future studies could demonstrate if this is a pattern seen among other theoretical frameworks or if this is unique to QuantCrit.

The second article in this dissertation examined the quantitative relationship between the passage of Texas HB21 and school funding. HB21 was passed in response to the *Morath* lawsuit that was brought about due to claims of inequity and inadequacy in Texas education funding. The analysis demonstrated that Texas did increase funding for schools, but the funds were not distributed in a way that disrupted inequity. A critical analysis of these results suggests that the context of the ruling enabled the legislature to

continue with the status quo. While the Texas Supreme Court had no problem expressing their dismay in the system as a whole, they changed their stance from previous rulings.

Prior to the *Morath* case, the Texas Supreme Court had no problem engaging in conversations around equity and discrimination in school funding. The latest ruling wanted nothing to do with calls for equity and adequacy and simply stuck to a call for the system to be better for all students. Within this call, they seemingly intentionally handcuffed themselves from ruling on future cases of inequity in school funding by asserting that their role is not to legislate but to interpret. In their ruling, the Court also empowered the legislature to do what they deemed fit to fix the system. By empowering a predominantly white legislature to adjust a system with very little in the means of checks and balances, the resulting bill had absolutely no impact on equity in the school system. Instead, it funneled additional funds to rural white schools. The regression analysis provides statistical evidence that supports the idea that the results of the *Morath* case and the subsequent legislation only furthered systematic discrimination in school funding in Texas. In an effort to uncover one potential reason for the continued inequity in school funding in Texas, I explored how the use of attendance in school funding is associated with low-income students.

The last article was the starting point for this dissertation. Since I have spent my career working in K-12 education, I have seen administrators labor over what to do about attendance, truancy, and school funding. Candidly, I have had two administrators lament how much funding they lost in a school year due to attendance. Furthermore, during the winter of 2021, a second wave of COVID left many of us wondering how much money we would lose as we saw our attendance slip into the 80s for multiple weeks. These

events led me to wonder if all schools were feeling the same financial strains and pressures due to the variable of attendance looming overhead. To evaluate this rough hypothesis, I first decided to see what the literature was already present discussing the relationship between poverty and attendance. Once I had established that there was plenty of academic work in this area, I pushed forward with designing my hypotheses and statistical methodology. The first three regression analyses left me digging back into Texas school finance law to help explain the counterintuitive nature of the results. Proponents of the status quo could even interpret the regression between poverty and school funding as evidence that Texas is giving more funds to poorer schools. While this is true, the $8.52 per pupil increase for each percentile that a school district has more low-income students could hardly be classified as enough funds to support those students in overcoming the obstacles to their education. While many school finance experts such as Knight and Baker have demonstrated that this is, in fact, inadequate for that student population, the Texas Supreme Court has put its trust in the elected legislative experts to determine whether that $8.52 is enough.

Since this analysis may confuse those without a national or Texas school finance background, a more specific statistical examination was provided. By calculating the money lost due to attendance, a direct relationship between poverty and money lost due to attendance could be seen. The results of this regression analysis were undeniable. A majority of the money that a school district lost due to attendance was associated with the percentage of students they had that was classified as economically disadvantaged. This quantitative result is evidence of a policy explicitly withholding funding from a marginalized population. It is not hard to draw a line from this policy to others, such as

redlining and voting rights restrictions that have created inescapable pockets of poverty, especially among minority Texans. The use of attendance in school funding is another tool used by the Texas legislature to systematically withhold school funding from marginalized communities of color.

Limitations

Within the preceding three papers, there are some limitations that must be examined. Primarily, the generalizability of the study and the potential for inconsistencies in the source of the data limited this study.

5.1.1 Generalizability of the Study

One limitation of this dissertation is the generalizability of chapter three and chapter 4. Chapter three provided a retrospective examination of a Texas Supreme Court ruling and the effects of the resulting policy changes. Both the ruling and the policy change were unique to the Texas education system. Being a retrospective examination, it is difficult to apply the analysis of the chapter to the current political landscape in Texas. As the tides of policymaking seem to be constantly in flux, the analysis of the phenomenon present in the lead-up to both the Supreme Court decision and the resulting policy appears to be less transferable than it might have been years ago. While the quantitative analysis demonstrated little association between the policy and an increase in funding equity, without any qualitative data surrounding the intentionality of the bill by those who crafted it, it is difficult to generalize whether HB21 failed its publicized goal

or was purposefully designed to meet precisely the outcome that was uncovered in chapter three.

Chapter four provided more area for generalizability but is still limited in its scope. Currently, only seven states use a funding model even remotely close to Texas. Compounding that is, the particular method in which Texas funds its schools is unlike any other in the United States. Luckily, more and more states are looking at moving away from attendance-based funding models. While the association between the variables of attendance and school funding was established by chapter four, I do not have enough background on how other states' formulas work to know if an analysis of their systems would find similar results.

5.1.2 Limitations of the Data

A limitation of the study is the data that was collected. In chapter two, my data was limited by the methods applied. In chapters three and four, I used available state data that, while easily accessible, may have its own weaknesses.

The meta-analytical nature of chapter two is subject to my selection criteria. Due to my focus's narrow areas, it is possible that my exclusion criteria inadvertently eliminated examples of QuantCrit in the analysis. Compounding this was my use of AI software to assist in my inclusion and exclusion. While these tools sped up what was a one-article-at-a-time examination, there is not enough data yet to know with certainty the tools' reliability to meet the researcher's exact goals. Some articles that met the inclusion criteria may have been inadvertently left out with these tools. While I could spot-check many of the excluded articles, some may have fallen through, potentially altering the

final counts for the study. Even still, I predict that the number of unintended exclusions would be low enough not to alter the chapter's main findings.

A central tenant of QuantCrit is the idea that numbers and data are not neutral (Castillo & Gillborn, 2022). The source of my data for chapters three and four was the Texas Education Agency. Many steps in this data accumulation by the state were influenced by human intervention. The use of free and reduced lunch to measure poverty has been disputed in literature (Fazlul et al., 2023). Since free and reduced lunch is a program that families have to opt in to, there is concern that this measurement underreports the number of children in poverty.

The other main concern for the data set is the imperfection in measuring attendance in Texas public schools. As a former classroom teacher, I cannot express how many times I forgot or could not take attendance for each class in a day. Fort Bend ISD in Texas underwent an attendance audit via a consulting firm, demonstrating a wide variation in reporting from classrooms (Gibson, 2015). Within this large district, the percentage of classrooms with unreported attendance on different campuses ranged from 0.3 percent to 13.1 percent. Those numbers do not include attendance considered late. Overall, Fort Bend ISD reported roughly 300,000 students annually whose attendance information was not entered on time between 2013 and 2015. The financial impact of reporting attendance late averaged $10 million annually between 2013 and 2015. Even with the state's financial penalties, school districts like Fort Bend struggle to get teachers to comply with attendance mandates.

Compounding the potential inaccuracy in reporting are the financial pressures placed on districts by the state. School districts have little incentive to go out of their way

to report absent students. For example, if a teacher marked all students as present, but a few were missing in their class, the school has no incentive to correct that mistake. It is unlikely that the state would be able to find such small-scale errors. As demonstrated above, a one percent change in attendance can make a substantial financial difference in school districts. This is not to say that school districts may misrepresent their attendance numbers but rather that they have little incentive to correct potential oversights. The attendance data used in chapter four may be affected by teacher attendance mistakes and the potential underreporting from campuses.

Implications and Areas of Future Study

There are many potential implications and areas of future study for each of these three articles. Chapter Two presented evidence of the utilization of a newer theoretical framework. Chapter Three provided insight into the legislative response to a Texas Supreme Court decision. Chapter Four provided quantitative evidence of the discriminatory effects of a school funding policy.

Chapter two's analysis of QuantCrit as a framework provided evidence that it is a growing theory in academia. During the ASHE keynote speech, Gillborn suggested that QuantCrit is a valuable framework for understanding data (Gillborn, 2022). As such, providing a meta-analytical lens of the utilization of the theory offers researchers an opportunity to track the mainstreaming of the theory and perhaps see its movement into other fields. By seeing the uptick in the utilization of the theory, researchers may be more comfortable adopting it in their research.

Moving forward, two future research questions have emerged from this study. The first is why the field of education has adopted the theory of QuantCrit more rapidly than other fields. This study could provide some context as to why education greatly outnumbered other fields' representation of QuantCrit. The second research interest would be to explore similar theoretical adoptions across multiple academic fields. It would be worth understanding the trajectory of theories and whether QuantCrit is a phenomenon unique to itself or following a steady progression of adoption experienced by other theoretical frameworks.

Chapter three provided a statistical examination of HB21. Through the background investigation of this bill, it became evident that despite the caustic tone present in the Texas Supreme Court decision, the Texas legislature found no urgency in the ruling and passed a bill that essentially did nothing. This allowed the legislature to boast publicly about the education bill they were crafting while simultaneously making no real effort to address the problems presented in the ruling. The implications of the analysis are difficult to transpose to current efforts in education reform due to the radical shift in the political landscape in Texas since 2016.

A follow-up study could use a similar methodology to explore the actual results of the education reform passed in Texas in 2019. A study involving the next budgetary cycle may confirm whether the legislature conveniently passed toothless bills or if the 2017 cycle was an anomaly. As more data continues to emerge, the pattern could be repeated with the 2021 and (assuming its passage) the 2023 education funding bills in Texas. It would be interesting for these studies to involve a qualitative component that was able to

craft a narrative around the dialog leading to the passage of the various bills. This would add much-needed clarity and context that the statistical analysis cannot by itself.

The most considerable potential implication stems from the results of the fourth chapter. In this chapter, money lost due to attendance was determined to have a strong association with poverty. This is important as many of the seven remaining states that use attendance in their funding look to move away from that model. In recent years, California (SB 830), Texas (HB 100), Idaho (HB 691), Kentucky (HB 504), Mississippi (HB 1369), and Illinois (SB 0813) have either introduced or passed legislation to end the practice. At the federal level, Rep. Mike Garcia has introduced a bill called the Cash to Classroom Act which bans states from using attendance-based formulas in education funding. It was introduced in the House on April 25th, 2023, as H.R. 2836 but has yet to attract a cosponsor. Most of the arguments made for the conclusion of this policy at the state or federal level are based on the discriminatory effects it has on marginalized communities and those in poverty. The quantitative analysis in Chapter Four supports the claims made by many stakeholders attempting to legislate against attendance-based funding.

A follow-up study for Chapter Four could look at the states that have passed bills to eliminate attendance-based funding to see if equity in school funding is improved or if other confounding variables still harm equity goals. There could also be a deeper look at the association between the state's will bills with attendance-based funding, their student attendance, and student academic outcomes. It would be interesting to see if states with attendance-heavy funding bills have higher attendance and if that attendance rate is associated with higher academic achievement.

Conclusion

This three-article dissertation tied together three ideas in an attempt to better understand some possible explanations for the inequity that exists in Texas school funding. The overarching lens of QuantCrit kept the quantitative analysis grounded in a critical framework. The second paper provided evidence of a lack of movement toward equity and funding, and the third paper offered one possible explanation for the enduring inequity. Rooted in a critical framework, these papers collectively provided evidence that the funding model present at the time of this study in Texas is not moving educational funding toward a more equitable distribution of resources.

APPENDICES

[APPENDIX 1. IRB NON-HUMAN DETERMINATION]

Not Human Research (NHR) Determination Form

If you are wondering whether your project constitutes human research and is therefore subject to review by the University of Kentucky IRB, answer the questions in this questionnaire. Upon completion of the questionnaire, your responses will be submitted to the Office of Research Integrity (ORI) for tracking purposes and more importantly, to ensure the correct determination has been made. Someone may also contact you with additional questions to help qualify the determination. We appreciate your cooperation!

Thank you!

Response was added on 09/27/2022 3:28pm.

Please provide a response to all of the statements in the sections that follow.
Note: you may be contacted for clarification purposes.

Name:	Stuart Keogh
College and Department:	Education: Educational Leadership Studies
Phone number:	682-225-0829
e-mail address:	stuart.keogh@uky.edu

NHR determination - Stuart Keogh Inbox ×

Stafford, Pam <pastaf3@uky.edu>
to Stuart, Helene, Joe

Fri, Sep 30, 2022, 10:29 AM

Good morning, Stuart.

On September 29, 2022, the Institutional Review Board (IRB) Chair or designee reviewed your attached NHR request form. Based on the information you provided, it was determined that your proposed UK dissertation project does not require IRB review because it does not appear you will be doing research about a living individual, but about schools in Texas, their funding, attendance, poverty in the area, and potential associations amongst those items. In addition, all information is publicly available. As such, the activity does not meet the federal definition of human subject: "*a living individual about whom an investigator conducting research obtains (i) information or biospecimens through intervention or interaction with the individual and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.*" [45 CFR 46.102(e)(1)].

Although your dissertation project does not require IRB review, please contact the Office of Research Integrity before making any changes to your project because some changes may make the project eligible for IRB review.

If you have any questions regarding the IRB's/designee's decision or if any of the information listed above is incorrect, please contact the Office of Research Integrity at 859-257-9428.

Thank you,
-Pam

Pam Stafford, MA
(she/her/hers)
Associate Director
Office of Research Integrity
University of Kentucky
316 Kinkead Hall
Lexington, KY 40506-0057
(859) 323-7399

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VITA

Stuart Keogh

Education

Graduate Certificate in Applied Statistics, University of Kentucky, Lexington, Kentucky, 2023

Master of Education, Curriculum and Instruction, Tarleton State University, Stephenville, Texas, 2020

Bachelor of Science, Biomedical Sciences, Texas A&M University, College Station, Texas, 2008

Awards, Distinctions, and Fellowships

- *Boyd Emerging Scholar 2022*
- *KPH Research Award 2022*
- *University of Kentucky EDL doc week coordinator and student liaison 2022-2023*
- *College Station ISD Hall of Fame Educator: 2012, 2016, 2017*
- *Cedar Hill 21st Century Educator 2011*

Professional History

Coppell ISD Coppell, Texas

Teacher and Instructional Coach

College Station ISD College Station, Texas

Teacher, Coach, Instructional Coach

Cedar Hill ISD Cedar Hill, Texas

Teacher, Coach