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AN ANALYSIS OF THE INTRA-DISTRICT VARIANCES IN PTA REVENUE AMONG
ELEMENTARY SCHOOLS

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Abstract

The purpose of this quantitative resource equity study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with per-pupil Parent-Teacher Association (PTA) group revenue at twenty-five elementary school sites in an anonymous suburban school district to determine the effect on the per-pupil instructional expenditure. Many studies reviewed the effect of additional revenue on student performance. Parent-teacher Association revenue was an additional resource for individual schools that is not accounted for in school budgets. The outward appearances of prospering districts can mask intra-district inequities caused by non-profit groups affiliated with each school. Parent-teacher association groups may have a subsidiary effect on equitable activities and spending by further marginalizing students at the elementary school sites within a district.

This study used various equity measurements to assess the revenue variances between per-pupil instructional expenditure and per-pupil PTA revenue at each of the elementary schools in an anonymous suburban school district. Four categories were analyzed: per-pupil instructional expenditure for 25 elementary schools, per-pupil instructional expenditure for 15 elementary schools, per-pupil PTA revenue for 15 elementary schools, and per-pupil instructional expenditure combined with per-pupil PTA revenue for 15 elementary schools. The assumption was per-pupil instructional expenditure and per-pupil PTA revenue would vary between the elementary schools, and those differences were attributed to various predictor variables. The study found low levels of inequity in per-pupil instructional expenditure and moderate inequity in per-pupil PTA revenue. The coefficient of determination and multiple regression found the predictors of gifted/talented percentages, special education percentages, and teacher experience

statistically significant in all 25 elementary schools' instructional expenditure. Only teacher experience was statistically significant in the sub-sample of 15 elementary schools' instructional expenditure. The predictor variables for the per-pupil PTA revenue and per-pupil instructional expenditure did not have a statistically significant relationship in the sub-sample of 15 elementary schools. The study concluded per-pupil instructional expenditure and per-pupil PTA revenue were statistically inequitable, but the predictor variables varied in statistical significance for the relationships with each of the sub-sample groups.

Keywords:

adequacy

equity

critical resource theory

instructional expenditure

PTA revenue

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Chapter 1

Introduction

Schools were designed as educational environments used to develop students'

intellectual, social, emotional, and physical competencies so that they can adapt to the world

around them (Chafouleas, 2020). Thomas Jefferson believed education was the foundation

of democracy, and the government's responsibility was to nurture the talents of students by

giving all an equal educational opportunity politically and economically (Jewett, 1997).

Student learning potential was affected by a variety of factors, including various school-

sponsored experiences and events (Buckley and Lee, 2021). John Dewey (1997) advocated

for learning by doing which means that schools ameliorate student development through

learning experiences that were active, engaging, and embedded in the community.

Parent-Teacher Association (PTA) groups have a history of contributing to the

learning process by providing financial and resource support to enhance the educational

environment for students (National PTA, 2022). Parent-Teacher Association groups were

comprised of volunteer parents who coordinated various fundings and opportunities at the

elementary school level through donations and fundraising events. Students were zoned for

various elementary schools within a school district, and their experiences may vary due to

the dominate social class of the parents whose children were enrolled at those schools.

Bischoff and Reardon (2014) referenced this as an uneven distribution of families in

neighborhoods that have different income levels or the term "income segregation." Some of

the affluent-based elementary schools may provide more services, resources, and

opportunities to attract teachers and give students a wider range of experiences/learning.

Thomas Jefferson expressed education as a means of breaking through those class barriers

(Jewett, 1997). This study highlighted the differences in the school instructional expenditure coupled with elementary PTA group revenues within a school district, and the study served as an awareness for educational leaders who strived to create equitable learning environments within the school district.

History

The history of PTA groups was paramount in understanding the premise and purpose of PTA groups as well as grasping the relevance of this study. The National Congress of Mothers and Parent-Teacher Associations was the pioneer group established in 1897 by Alice McLellan Birney and Phoebe Apperson Hearst for the purpose of studying and advocating for child welfare and education (Schoff, 1916). Schoff (1916) identified three fundamental purposes for parent-teacher associations: give mothers and fathers the opportunity to better educate themselves about nurturing children, keep parents abreast of what the schools were doing, and study community conditions affecting the welfare of the children to engage community support. Burgard (1948) defined Parent-Teacher Association (PTA) groups as a means of establishing support and information in the school district by developing a cooperation between schools, homes, and community. The purpose and mission of the PTA groups was centered around the best interests of "all" children.

Parent-Teacher Association groups have a history of supporting and influencing schools in a variety of ways that provided an invaluable and unmeasurable service (Murray, Domina, Renzulli, and Boylan, 2019). These non-profit organizations performed different functions to alleviate financial burdens on the school through fundraising as well as provide volunteers to overcome staffing shortages. Some schools conducted online auctions for vacationing to islands, chauffer rides to events, attending major sporting events to finance

class-size reductions, staff salaries, or classroom technology (McKenna, 2016). Parent-Teacher Association groups served a variety of purposes to assist schools in meeting the mission and goals of the school district and community.

The access to rich learning opportunities created by PTA groups within a school district can potentially optimize student outcomes. Opportunities were created by the availability of resources and funding that makes possible experiences that enrich student perspectives and enhance their learning. Brown, Sargrad, and Benner (2017) argued that for every additional $1,000 in per pupil spending student learning outcomes increased which enforces the idea of additional PTA revenue at school sites potentially increased student learning development. Districts and schools do not report private contributions, so district financial data were skewed (Brown et al., 2017). The diversification of financial endowment sources created different opportunities which generated various educational outcomes (Brown, 2015). Mathewson (2020) provided evidence that by spending additional money in specific ways can boost student success. Educational opportunities potentially increased with more revenue, but it depended on how the money is spent (Jefferson, 2005). Ballard and Maiden (2018) conducted a study that found more money produced higher achievement among students in Oklahoma school districts. Parent-Teacher Association groups generated additional revenue which allowed schools more economic flexibility in spending. This study highlighted those economic differences between elementary school PTA groups to identify possible variances in per-pupil instructional expenditures, PTA revenue, and learning opportunities.

Diversifying and Expanding School-Sponsored Events

Increasing and diversifying experiences within a school district could serve to make

education meaningful to all the students and not a privileged few. The review of the school budgets and the PTA revenue at each school site within a district gave an overview of the spending potential at the individual elementary school sites. Based on the leadership standards, school districts have an obligation to all students at different school sites to ensure learning opportunities were fully accessible to all students and not solely to privileged schools that have varying abilities to secure funding and provide school-sponsored experiences (NPBEA, 2018). Brown et al. (2017) described how an exorbitant amount of money is generated by PTA groups through unregulated donations and fundraisers to fund various school-sponsored programs and activities. Murray (2019) also discussed the unregulated PTA groups' funding mechanisms such as fundraisers and donations as widening the funding and resource gaps among schools. Cope (2019) highlighted the donations made by parents contribute to the extracurricular activities and resources at the individual school sites. The evidence suggested that PTA groups at the elementary school sites within a school district can provide considerable amounts of financial support to elementary schools' budgets that may not be accounted for in funding formulas. Those differences in funds can create a disproportionate level of opportunities in learning experiences.

Parent-Teacher Associations may affect the school experiences in a variety of ways at the elementary schools (Brown et al., 2017). The Parent-Teacher Association information could help identify the opportunity gaps at the elementary site-levels within a school district. Murray (2019) pointed out that these gaps were discrepancies in curricular resources, instructional staff, new technologies, and social events, which can form or improve through the resources provided by PTA groups. Any experience gained through school-sponsored events can potentially aid in the development of the student.

Blankstein, Noguera, and Kelly (2016) referenced equity as a commitment to guarantee students receive what they need for success. Societal success was contingent on expanding opportunities for everyone (Blankstein et al., 2016). Blankstein et al. (2016) identified many occurrences in history where marginalized groups were assisted through pursuing equity for all: Franklin D. Roosevelt and the New Deal, Lyndon B. Johnson and the Civil Rights Act, Martin Luther King Jr. and peaceful protests, Title IX (educational rights of women), and Clinton Administration expanded internet access to the poor. All these initiatives strived for by visionary leaders were achieved through pushing for equitable conditions for all (Blankstein et al., 2016). Oppositional forces were nullified by highlighting the benefits for all people and not only a select group. It is important to highlight the history of inequities and how they were remedied through establishing laws for everyone and not only a select few. Equity rights surrounding PTA group revenue and school-sponsored activities affect all students and school sites within the school district.

Parent-Teacher groups' engagement and participation at the elementary schools could affect fundraising activities and the acquisition of additional revenue for the elementary school sites. Redford, Huo, and McQuiggan (2019) studied parent-school involvement for early elementary students. Redford et al. (2019) identified several barriers impeding parents from fully engaging in their student's learning process. Those barriers entailed: inconvenient meeting times, lack of childcare, conflicting working schedules, safety concerns about going to the schools, disconnect and unwelcoming feelings from school officials, transportation problems, and lack of communication from the school (Redford et al., 2019). The authors found low involvement differences were coupled with race/ethnicity, household poverty status, parents' highest level of education, parents' labor force status, and home primary

language. The findings from Redford et al. (2019) research concluded "getting off work" and "inconvenient meeting times" as the greatest barriers to parent involvement which may be more prevalent in lower socioeconomic environments. Redford et al. (2019) study illustrated how some PTAs can have an influential effect on programs within elementary schools. The information detailed the challenges and importance of increasing PTA memberships at elementary schools to influence functionality and participation of the PTA groups' mission with their schools.

The quality of the elementary programs was defined through four aspects as identified by Pianta, Downer, and Hamre (2016): structural elements of a program, features of the classroom environment, direct teacher-student interactions, and quality rating of the school system. Pianta et al. (2016) concepts focused on classroom instruction and student outcomes which were affiliated with the school-sponsored events as extensions of the classroom. School-sponsored events usually supplemented a curriculum, instructional, and/or community practice within a school district. Pianta et al.'s (2016) discussed the expertise of the teachers in their content area created a meaningful connection to the various school-sponsored events. Providing additional opportunities for learning could expand student achievement.

Equity and Adequacy

The terms equity and adequacy allowed an understanding of social justice and how it related to advantaged and disadvantaged students. Brown et al. (2017) listed some of the wealthiest PTA groups in the nation that paid for after-school programs, equipment, art programs, before and after school care, and other activities. School districts were unclear whether they have policies in place to limit their PTA groups' scope of spending or monetary acquisition. Oklahoma does not have monetary limits identified from the PTA

bylaws (2019). Rubenstein, Schwartz, Stiefel, and Bel Hadj Amor (2007) relayed that resource intensity is not the answer for increasing student performance but rather equitable and adequate opportunities.

Carr, Gray, and Holley (2007) distinguished between two concepts: adequacy (every student had the minimal resources) and equity. The researchers explained equity in three components: horizontal (equal treatment of equal students), vertical equity (extra resources for disadvantaged students such as economically or special needs), and fiscal neutrality (resources should not relate to the local revenue of the student's residence). Equity allowed students to share educational experiences by equalizing opportunities no matter their family or PTA financial status within the school district.

Murphy (1988) described the concept of educational equity as the equitable distribution of input resources such as instructional methods. The various educational movements involving resources started with the expanding access to minority and handicapped students, to distribution of selected resources such as money, and finally to "alterable educational resources" (e.g., quality of teaching) (Murphy, 1988). The distribution of the opportunity of learning involved the students access to quality instruction. Murphy (1988) showned a systemic problem of resource allocations highly correlated with student achievement.

Adequacy was a minimal threshold used to determine the fairness of those school activities (Carr et al., 2007). Burroughs (2015) described the idea of adequacy as indoctrinating a "sufficientarian" strategy in which a threshold is established but unequal opportunities were permitted. Theorists such as First and Miron (1991) used the term fiscal adequacy to provide sufficient resources for educating students. Adequacy over time shifted

from the inputs (curriculum) to outputs (academic performance), and the education finance was focused on social goals (First and Miron, 1991). Labaree (1997) discussed further social mobility (change in social status) as a means of stratifying socioeconomic cultures by opening the availability of resources to students of various economic and social influence. Education was touted as a gatekeeper for individual success in the marketplace (Burroughs, 2015). Bøyum (2014) expounded on the practice of equity through the discussion on concepts of implicit (moral reasoning) and explicit (parental income) fairness which can affect student opportunities to learn.

School districts have an obligation under the 2018 National Educational Leadership Preparation (NELP) standards to ensure every student in the district is provided with an equal educational experience (NPBEA, 2018). Family and localized affluence should not dictate what educational opportunities school districts provide students. Carr, et al. (2007) described this concept as fiscal neutrality where resources received by students should not associate with the area where students live. The challenge entailed breaking from the status quo and creating a unified school district opposed to a district of individual schools (Smith and Brazer, 2016). Differences in PTA group revenue could hinder students from achieving common experiences and shared opportunities. Educators must stay aware and vigilant of the culture of their school community and school climate to effectively address equity concerns within their school district (Lumby, 2012). Parents can provide additional learning experiences outside of the schools, but the issue becomes relevant when the PTA groups' financial abilities increase and counterbalance the school-sponsored operations and learning opportunities at specific school sites.

Oklahoma PTA (2019) governs all the PTA groups in Oklahoma. Their bylaws (see

Appendix A) provided a structural system with fifteen articles in which all the PTA groups abide. Those articles began with the purpose of the PTA organization. The purpose of PTA organizations centered on promoting the welfare of children, raising the standards of home life, advocating the physical/mental health, and engagement of families and educators. Also, the Oklahoma PTA bylaws (2019) identify a unified effort in achieving physical, mental, emotional, spiritual, and social well-being of "all" children. The mission of PTA groups is purposeful, but it only sets guidelines for establishing, maintaining, and being fiscally responsible as a non-profit organization.

<div align="center">**Problem Statement**</div>

The problem is individual elementary school PTA groups generate different amounts of revenue at intra-district elementary schools which creates a supplemental revenue source to the elementary schools' budgets. The additional revenue creates economic differences in school instructional per-pupil expenditures and budgets which could marginalize certain students or school sites. Schools operate on various local, state, and federal funding formulas. These funding distributions (grants, ad valorem taxes, etc.) were dispersed to provide an equitable means of revenue for school districts and school sites.

Carr et al. (2007) describe three types of equity: horizontal, vertical, and fiscal neutrality. Horizontal equity entailed treating equal students as equals by giving students who were alike equal funding in the schools. Vertical equity encompassed providing additional capital for students who were different in categories such as English as a Second Language (ESL), special education, free/reduced lunch, and Gifted/Talented programs. Carr et al. (2007) detailed a third principal of fiscal neutrality that explained that a quality education should not have wealth or revenue capacity determined by where the students

reside.

Parent-Teacher Association groups offered an additional source of revenue and resources to specific school sites. The PTA capital was only accountable to the Internal Revenue Service (IRS) through filing information returns for their income and expenses which were exempt from taxes, but the money was not factored into the budgets of the school districts or individual school sites. Depending on the fundraising initiatives, schools can secure disproportionate monetary amounts which affords some schools additional school-sponsored functions and resources. Parent-Teacher Association group revenue may account for an overlooked discrepancy in the funding which was not addressed in the vertical equity of the schools, where free/reduced lunch and gifted/talented programs were a criterion in the budget composition to address poverty and additional programming at school sites.

Incorporating PTA group revenue into the budget could highlight a disparity of opportunities and resources within the schools. The difference in revenue may substantiate the advantages and disadvantages at school sites. All schools within a school district were given a budget to meet their organizational and operational needs. Parent-Teacher Association groups could enhance those school-site experiences through generating additional revenue through fundraisers and donation acquisitions.

Purpose

The purpose of this quantitative resource equity study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous school district to determine the effect on the per-pupil spending. Parent-teacher association

revenue may create a variance in intra-district equity by inflating accessible revenue. The information can help identify whether an equity problem exists within a school district that had differences in the acquisition of PTA revenue amounts. The goal of collecting and analyzing data was meant to address the inequity and not cast aspersion on a school or school district (Kaplan and Owings, 2023). As mentioned previously, school districts have an obligation according to the 2018 National Educational Leadership Preparation (NELP) Standard Component 3.2 to evaluate, cultivate, and advocate for equitable access to opportunities and resources to support the well-being of each student. Opportunities and experiences may vary from school site to school site due to the variances in PTA group revenue and engagement. Those differences have a relationship with PTA memberships, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience. The elementary students within the same school district may have dissimilar educational experiences from their district peers due to the variability in the supplemental revenue.

Increasing the equitable opportunities in the school district could produce a greater level of community. Helping students less fortunate creates a sense of empathy and compassion (Wagner, 2008). To achieve equity within the school district, a change in the paradigm needs to occur in the PTA programs. PTA groups may act as the catalyst within the reformation to an equitable system by engaging in social justice initiatives within the district. This study highlighted different instances and levels of equity to bolster the implicit (feelings about schools) and explicit (revenue) effect of PTA groups on elementary opportunities.

Research Questions

Many questions arose with the varying pockets of affluence in communities within the anonymous school district. The recognition of those variances can change an antiquated system comprised of school sites with individual PTA groups operating independently from one another. The following questions allowed for a better understanding of the relationship between intra-district PTA group revenue and per-pupil spending to examine equity between elementary schools. Question one focused on the per-pupil instructional expenditure while question two analyzed per-pupil PTA revenue.

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

Definition of Terms

The study focused on the concept of equity. Equity provides students with the resources based on need to allow for equal access (Skousen and Domangue, 2020). Equity had three forms: horizontal, vertical, and wealth neutrality (Carr et al., 2007). Horizontal equity was defined as funding equals equally (Carr et al., 2007). Vertical equity recognized students and schools were different in financial need, and the children who require assistance should get additional resources (Carr et al., 2007). Wealth neutrality referenced quality education as equal across all socioeconomic statuses or economic capabilities (Carr et al., 2007). Equity audits are tools used to identify systemic trends of inequity within the schools and school district (Skrla, McKenzie, and Scheurich, 2009). The goal in equity audits was ensuring access to resources and closing the gap between disadvantaged students

to increase student outcomes. Adequacy was recognized by several definitions but for this study it is used to give the necessary resources to educate students at the high state standards (Kaplan and Owings, 2023).

Also, throughout the paper, Parent-Teacher Association groups were used to identify each site-level non-profit organization. The research literature referenced Parent-Teacher Organizations (PTOs) and Parent-Teacher Associations. Linnell-Olsen (2021) differentiated between the two by stating PTOs do not belong to the national organization like PTAs. Parent-Teacher Organizations have greater flexibility in their operations, but they lack the support from the National PTA (Linnell-Olsen, 2021). Though both organizations were used to assist in supporting the mission of the school(s), they were separate entities. Barrett (2019) illustrated the difference between PTAs and PTOs which was based on definition, number of units, professional staff, membership dues, insurance, tax-exempt status, policy advocacy, and national voice. Though they differed in certain categories, PTA and PTO groups both strive for the improvement of schools and students. In this study, Parent-Teacher Associations were referenced because the school district analyzed belongs to the national PTA organization. The significance of this study is further explained.

Significance

The results from this study may provide district leaders an awareness about the additional revenue generated by the Parent-Teacher Associate groups at the elementary schools within the school district. The discrepancies in the revenue generated by PTA groups can cause an inequitable learning experience and limit access to opportunities across the school district. School leaders' cognizance of the accessibility of services and activities within the district can affect student achievement and involvement are optimizing services for all students and not only

select groups. This study gives another platform to study equity and social justice reform in the school systems as well as grow district leaders.

The knowledge gap was the effect PTA generated revenue on the per-pupil instructional expenditure at the intra-district elementary school sites. The key was understanding the variances in school instructional expenditures coupled with PTA revenue to gauge the effect on potential school opportunities, resources, or instructional-based initiatives. To evaluate the effect PTA group revenue on intra-district resource equity, a revenue equity audit research design structure encapsulated by the social justice design (Skrla et al.,2009; Creswell, 2015) in which hard data were collected by examining multiple elementary schools in a specific school district. This resource equity study was based on the per-pupil instructional expenditure and per-pupil PTA revenue at each school site. The study looked at whether a relationship exists between the dependent variables (per-pupil instructional expenditure and per-pupil PTA revenue) and other school characteristics such as PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience.

Overview of the Study

Chapter 1 begins with an introduction of the PTA groups, and their role in the educational system. The key concepts of equity and adequacy were highlighted and explained to assist with a deeper understanding of the purpose of education and PTA groups within the elementary school. The chapter expounded on the benefits, purpose, and barriers encountered by PTA groups. The primary questions centered around the effect of intra-district PTA group revenue on instructional expenditures in the elementary schools. Chapter 2 literature review delved into the various court cases and studies influencing intra-district

equity. Parent-Teacher Association groups can exacerbate the funding equity by marginalizing opportunities of less-affluent students at elementary schools. The chapter also explained the frameworks of equity, social justice, and critical resource theory. Chapter 3 detailed the methodology used in the study. The study utilized data from a suburban Oklahoma school district and Oklahoma State Department of Education to provide budgetary information about PTA revenue and instructional expenditures at the elementary school sites. The information was analyzed by several equity tests (coefficient of variation, Gini Coefficient, Theil Index, McLoone Index, coefficient of determination, and a multiple regression test) in three different category levels: whole district per-pupil instructional expenditures, whole district per-pupil PTA revenue, and whole district per-pupil instructional expenditure combined with per-pupil PTA revenue. Chapter 4 conveyed the findings from the data collected and interpreted the statistical findings. Chapter 5 summarized the findings while elaborating on the implications, strengths/weaknesses, and recommendations for future studies.

Theoretical Framework Overview

This study encompassed several key concepts of equity and adequacy. Equity was at the core of the research, and the researchers, Verstegen and Driscoll (2008), Carr et al. (2007), and Owings and Kaplan (2010) provide more insight into horizontal and vertical equities. Horizontal equity was the amount of revenue all schools receive for the enrollment numbers or plainly put "equals treated equally" (Verstegen and Driscoll, 2008). Vertical equity acknowledged that schools and students were different, and the educational system channeled more resources to those schools with students who need it such as English Language Learner (ELL), special education, free/reduced lunch (Verstegen and Driscoll,

2008). The concept of fiscal neutrality highlighted where students live or their socioeconomic status should not determine the resources available (Carr et al., 2007; Owings and Kaplan, 2010). These concepts led to opportunities of learning which dictated equitable conditions consisting of the availability of revenue and resources that contributed to student learning (Marzano, 2003). The PTA group revenue could affect school-site equity and influence school-sponsored opportunities. Adequacy set the threshold for the minimal level of engagement and services provided for the students at each of the school sites. Each of the concepts contributed to the theoretical manifestation in social justice within the education system.

Limitations and Delimitations

The researcher acknowledged the limitations and delimitations within the research and out of the control of the study. Only twenty-five elementary schools in an urban district were studied. Specific data were analyzed at each school site. The fiscal data were from the Oklahoma Cost Accounting System (OCAS) and Office of Educational Quality and Accountability (OEQA) may have inconsistencies from school to school. Also, the financial information from the PTA groups was limited due to PTA group turnover and attrition. The results were not meant to generalize beyond the studied elementary schools or school district. The rationale behind examining elementary schools in one fiscal year and in only one suburban school district was to bring attention to an alternative revenue source at individual school sites. The study provided a baseline for future research to use equity audits to examine PTA group revenue and determine the effect on per-pupil instructional expenditures within a school district.

Assumptions of the Study

The researcher assumed the anonymous school district followed the financial guidelines and reporting set by the Oklahoma Department of Education (ODE). The researcher assumed the financial information and school demographics retrieved from the OCAS and OEQA were accurate and complete. The researcher assumed that the percentages from the economically disadvantaged reflected the poverty at each school site. The researcher assumed that the gifted/talented programs and teacher experience reflected the additional programs offered at the school sites.

Chapter 2

Literature Review

The purpose of this study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous school district in Oklahoma to determine the effect on the per-pupil spending. The exploration on PTA revenue and the effect on each school's per-pupil spending provided more insight on horizontal equity, vertical equity, and fiscal neutrality (Owings and Kaplan, 2010; Verstegen and Driscoll, 2008; Carr et al., 2007). Elementary schools in a suburban school district were analyzed using the equity audit concepts from Skrla et al. (2009).

Chapter 2 provides a deeper understanding of the context in how equity was addressed at the state levels through court cases and policies. Those cases evaluated practices and equity concerns in state funding formulas that unevenly distributed revenue throughout the state in school districts. Most of the rulings were in favor of the plaintiffs which lead to positive changes in the distribution of funding (Baker, 2010). Baker (2010) referenced disparities in school funding throughout states based on race and/or poverty. Some of his findings were based on the longitudinal analysis of racial disparities in school funding conducted by Robert Bifulco (2005). Bifulco (2005) found the average black student's district had from 3.2 percent to 15.8 percent less funding than the average white student's district. This current study does not consider the racial disparities within the school district, but it could be part of a future analysis to determine if there is a relationship.

Another aspect of the effect in funding levels is student achievement. Though this current study does not consider the effect revenue had on student outcomes, it is important for future

research to highlight other studies that have shown a correlation. Ballard and Maiden (2018) through their research found a strong significant relationship between additional per-pupil expenditure on instruction and increasing student achievement. Their findings indicated an additional $52 per student moved a district in a higher level of student achievement. Jerome Venteicher (2005) conveyed the school funding affects school performance. Based on his research, he found students without access to proper funding were excluded from opportunities to learn and succeed (Venteicher, 2005). These and a multitude of studies illustrated the effects of per-pupil expenditures on student performance.

In this study, understanding the relationship between increasing PTA revenue and per-pupil instructional budgets, the following questions were addressed:

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

Overview and Purpose of the Literature Review

Studies and court cases highlighted the equity issues within schools in various states. The research and legal filings identified the lack of resources coupled with cultural expectations as contributing factors of inequity within the schools. The state courts did not address core minimum requirements for schools, but they did evaluate whether basic literacy, calculation, and verbal skills (foundational skills) were taught to engage civic participation (Darden and Cavendish, 2011). Schools seemed primarily designed for citizenry. Courts were more likely to seek intentionality of racial discrimination, and the equality argument declines when referencing socioeconomics (Darden and Cavendish, 2011). An understanding of inequities within school

districts' financial allocations and laws was necessary to grasp the subsidiary effect of revenue generated by PTA groups. State and local funding formulas have been challenged, but the financial equity issues associated with intra-district PTA groups' is void of scrutiny. Highlighting the cultures at individual school sites can lead to an understanding of the influence and composition of PTA groups.

Legal Background

The Equal Protection Clause of the 14th Amendment in the United States Constitution was used by the courts as the basis for guaranteeing equal access to education. The opportunity to learn alluded to equitable conditions within the school that promoted every student to learn (Marzano, 2003). Several court cases highlighted school equity in various instances to portray the relevance and importance to allowing all students the opportunity for school-sponsored learning. A plaintiff on equity issues had to prove certain groups explicitly treated another person differently, or evidence needed to create an inference of discriminatory intent. Throughout the legal battles over resource equity in the schools, courts wavered over those protections for educational rights due to interpretations. The 1954 *Brown v. Board of Education* case was a monumental case in establishing de jure law for equitable education rights for all students. In 1973, the Supreme Court ruled in the *San Antonio Independent School District v. Rodriguez* that the United States Constitution did not guarantee education as a federal fundamental right, so the onus is on the legislative processes of the states (Frisch, 2017). In *Robinson v. Cahill* (1973), the New Jersey Supreme Court held that the constitution's education clause required the State to ensure equal educational opportunity. *Abbott v. Burke* (1981) was a school funding case in New Jersey where the court determined the State failed to adequately fund high poverty, urban school districts. *Rose v. Council for Better Education* (1989), the Court determined education was a

fundamental right which needs adequate funding by the State, so all school districts have the

same opportunity for an adequate education. The Court further iterated that the onus is not on the

local school districts. In the *Campaign for Fiscal Equity v. State of New York* (NY, 1993-2006),

the Court of Appeals issued a decision that the State must offer all children the opportunity to a

"sound basic education." The Campaign for Fiscal Equity (2013) highlighted what the courts

defined as basic education: physical facilities, resources, updated curricula, qualified educators,

appropriate class sizes, and resources for struggling students.

Attempting to service all students, states developed various funding formulas to provide

school districts with an equitable amount of revenue to achieve the objective of educating every

student within their district. Through litigation, plaintiffs fought the disparities in funding

between districts (Webb, 2017). Once the allocations are made to the districts, the financial

burden was tasked to the local educational agencies (LEA) to indiscriminately distribute the

revenue to the schools. Unfortunately, those resources were not evenly distributed throughout the

districts which were exposed and challenged through court cases such as: *Hobson v. Hansen*

detailed how low expenditures were concentrated in high-minority neighborhoods (Webb, 2017)

and *Rodriguez v. Los Angeles Unified School District* described the equitable distribution of

teachers (Espinosa, 2010). Ultimately, those cases did not produce long-lasting results probably

due to the exorbitant amount of money incurred in the school districts and teacher unions (Webb,

2017).

Researchers identified many contributing variables of funding inequity within school

districts. Burke and White (2001) found intra-district inequality varied from state-to-state, and

the variance was attributed to racial, educational, or metropolitan lines depending on the state.

Iatarola and Stiefel (2003) communicated resources were evenly distributed in states with less

districts. Webb (2017) described under-resourced schools were primarily attended by minority and low socioeconomic status (SES) students. She discussed an affluent school district in Florida had elementary schools labeled as "failure factories" based on violence, low achievement, and impoverished parents. The situation escalated after the school district achieved "unitary status" as identified in *Brown v. Board of Education* (stated the school district had met the requirements for an integrated school system). The school board shortly after reassigned students based on geographic proximity creating a de facto segregation system. Webb (2017) relayed other researchers found differences greater than $5000 in per-pupil spending between schools in urban districts.

Equity Background

Rubenstein, Schwartz, Stiefel, and Bel Hadj Amor (2007) found schools serving high proportions of minority and low SES students received more funding. The additional revenue allowed for hiring additional teachers, but those teachers were less experienced and educated (Rubenstein et al., 2007). Iatarola and Stiefel (2003) discussed the assessment of horizontal equity (general education funding for all students), vertical equity (categorical funding for students with specific characteristics), and equality of opportunity (lack of positive association between per pupil resources and characteristics of disadvantaged groups). The equities related to resource distributions and performance within the school district. The authors' results illustrated deficiencies in vertical equity and equal opportunity in the distribution of teacher resources such as salaries and certifications (Iatarola and Stiefel, 2003). Owings and Kaplan (2010) bolstered those results in their study which expressed schools with higher levels of poverty and minorities exuded lower salaries, less experience, and fewer credentials. The researchers speculated those

inequities stem from teacher-transfer policies (veterans relocating to different schools), ineffective budgeting practices, and political/social influences on board members' decisions.

Rubenstein (1998) pointed out most general fund allocations were distributed as positions rather than dollar amounts. Schools with high poverty rates acquired less experienced, lower paid, and less educated teachers. The study inferred those teachers were less innovative and inclined to seek outside educational endeavors. Rubenstein (1998) conveyed many of the teacher positions were not located in the classrooms. An inflated report in the quantity of teachers created a false representation of teacher-student ratios which could be perceived as a beneficial characteristic at a school site but inaccurate.

Other countries took a different approach to address the inequities in funding public schools. Mestry (2016) discussed how South Africa's government passed a Norms and Standards for School Funding policy to address the imbalance in funding created by the apartheid. This policy reduced state funding for more affluent schools. The governing bodies over the schools supplemented the reduction in funds by passing the cost to the parents. The parents in the affluent areas paid school user fees, donations, and fundraising projects (Mestry, 2016). The additional financial expense created another issue of social inequality because poor learners could not afford access to specific schools.

There were many variables such as race, socioeconomics, gender, culture, disability, sexual orientation which contributed to inequality in the school systems (Otunga, 2009). Details of the inequality mentioned the impoverished schools received more revenue and more teachers. The consensus on the data was misleading because low socioeconomic schools had fewer quality teachers and lower expectations (Jimenez-Castellano, 2010). Jimenez-Castellanos's (2010) study detailed how bicultural and low-income students carry an unconscious expectation of failure

which related to teacher experience. Teacher experience was linked to teacher effectiveness and student performance in schools (Mathewson, 2020). LaCour, York, Welner, Valladares, and Kelly (2017) discussed various ways to close opportunity gaps within schools through an International Baccalaureate (IB) curriculum. The program offered pedagogical training (teacher development), challenging coursework (advanced placement), and rigorous assessments. LeCour et al. (2017) utilized research-based practices in creating opportunities in the schools. The modifications could create an equitable environment by attracting and retaining qualified educators, and the changes could assist in balancing student achievement.

Peter Christopher Mhando (2016) studied intra-district distribution patterns of non-monetary resources within elementary schools based on socioeconomic status (SES) clusters. He focused on equal opportunity rather than solely on dollar amounts. He discussed how a resource disparity exists between middle income and high-poverty neighborhoods within a school district. Opportunity gaps were presented wherever wealth differentials exist. He pointed out how higher SES segments within a community influenced district decisions in areas of superior programs and curricula. Lower SES segments lacked the knowledge and influence to advocate for their share of resources. Mhando (2016) stated the use of district averages concerning resources masked the real situation at the school sites.

Mhando (2016) defined opportunity gap "as the differences in educational related resources available to students in elementary schools located in different SES neighborhoods." He identified several studies on inequity within the school districts. Those studies incorporated similar information on school district policies and practices that accounted for the majority of resource discrepancies between high poverty and middle-income schools within the district. The district's allocation formulas and resource differences created an inequitable system.

Non-monetary resources were contributors to the opportunity gaps present within school districts. Administrators' cognizance of the inequities within the school district ensures wealth accumulated in areas of the school district do not create social divides or opportunity gaps (Mhando, 2016). Self-evaluation can aid district and site-level administrators in the achievement of an equitable system for all students within the school district. Mhando (2016) validated non-monetary resources vary systematically between high poverty and middle-income neighborhoods. Also, he identified the process of resource allocation created unintended consequences by widening the opportunity gaps. His study articulated disparities between schools and the potential effect of nonprofit educational organizations such as PTA groups have on school sites.

Frisch (2017) stated anecdotal evidence suggested private donations increase existing inequalities. She identified education support organizations (ESOs) were created to offset the budget shortfalls in school districts, but they aligned with communities of higher socioeconomic statuses. The quality of the school sites was contingent on the property wealth of the community. Frisch (2017) described various interventions such as disbursing parts of donations to other school sites, permitting donations to pay for parts of public schooling, or utilizing donations for school-wide programs. Acquiring and reallocating funds was a sensitive issue because parents possess the ability to relocate, or the state could possibly reduce future funding (Frisch, 2017).

De Luca, Takano, Hinshaw, and Raisch (2009) used data from the eight largest urban school districts in Ohio to determine the relationship between human resources (teachers) and student need. The information was collected from public elementary schools (K-8). Two school districts, Akron and Dayton, presented vertical equity where disadvantaged students were taught by higher salaried teachers who were more experienced and educated. The other school districts

were not vertically aligned. The most common formula used to distribute money in school districts was staff-based. Staff-based district systems (if the collective bargaining agreements permit) allowed teachers by seniority to choose the building they preferred to teach. Many veteran teachers would prefer schools with less disadvantaged students. A student-based funding might produce greater equity because the schools would receive funding based on individual characteristics of each student. Also, student-based funding would allow principals to compete for the teachers by providing incentives. De Luca et al. (2009) described how there were no incentives for teachers to serve at-risk student populations. The authors expressed the expert teachers would more likely teach in the neediest schools if they were headed by expert principals. The researchers conveyed further studies conducted on teacher quality was critical in explaining student achievement and teacher quality varied with student characteristics. Buildings vary within a school district, so each site needs an individual assessment that incorporates the contributive factors. The authors detailed how policymakers need to fund pilot studies of new agreements on teacher assignments with respect to student poverty status and student achievement goals. Linda Darling-Hammond (2000) bolstered their study by conveying through her research on teacher quality or effectiveness as a contributor to improved student outcomes (stronger results in reading and math). Generally, urban schools spent more money but experience lower student achievement.

Baker (2009) studied the with-in district fiscal resource allocation across elementary schools in Texas and Ohio. He was focused on whether Weighted Student Funding (WSF) achieved greater resource equity. He concluded the major cities of Cincinnati and Houston displayed greater within-district cost-adjusted equity than other cities. Baker (2009) found schools had trouble with marginal costs and current spending distributions due to less-well-

funded urban core districts having difficulty reshuffling the resources. New York City attempted to implement a WSF system, but they abandoned it due to the complexity and cumbersome formula. The author found that schools with a higher percentage of poor pupils received more money and had more teachers, but the teachers were less educated and less paid. Baker (2009) conveyed the need to continue exploring financial resource distributions and teacher distributions across schools.

Lugg and Shoho (2006) had ideas on creating a new social order through evaluating the principles of George Counts, a progressive educator who advocated for social justice and social reconstructionism. Social justice was described as serving all children from all backgrounds while social reconstruction consists of redesigning the societal norms as an inclusive system for all children. The authors described an antiquated educational system operated by elitist school boards who reproduced an inequitable status quo. Lugg and Shoho (2006) described Counts's philosophy on schools as the equalizer for attaining social betterment. Educators assumed the roles of political actors, and educational leaders must prepare for professional consequences such as dismissal or turbulent careers for challenging the norms of educational equity within the school district (Lugg and Shoho, 2006). Equity in schools was a politically charged endeavor. PTA groups were instrumental in changing how school districts service their student needs. Through the active participation of the PTA groups, district administrators enacted the necessary policies to ensure all students were afforded similar educational opportunities.

Several articles were written on the variances in revenue among intra-district PTA groups. Brown, Sargrad, Brenner, and (2017) researched many PTA groups in elementary schools across the United States. They found millions of dollars were raised by parents in affluent schools for an already advantaged group of students. Those additional funds allowed for

additional programs and staff in low-income schools could not afford extra resources. Getting money was an obstacle for some schools but routine for others (Bryant, 2001). Affluent parents have more money to contribute, more connections to contributors, and more access to availability of resources. While some schools generated exorbitant amounts of PTA revenue, they struggled to spend their balances year-to-year, and other schools within the district service students struggled to eat (Weese, 2018). Weese (2018) described some school PTA groups struggling to raise money because parents earned lower wages, limited connections to wealthy donors, and parent work schedules do not allow for volunteering. Ferguson and McIntyre (2019) found schools with the highest proportions from low-income families lacked a PTA group or generated small amounts of revenue from a PTA. Morton (2021) reported on the elementary schools in Seattle, Washington, and he described how Rising Star Elementary parents could not afford to pay the membership dues for their PTA, but a neighboring school, Green Lake Elementary, PTA paid the cost for their elementary's school vocal teacher and a full-time counselor's salary. Parent-teacher association board members and school staff at the impoverished school donated their own money to cover expenses such as membership fees, teacher appreciation week, or tickets for special events (Morton, 2021).

Other examples of revenue discrepancies among PTA groups were prevalent across the United States. Weese (2018) conveyed that William T. Sherman Elementary School in New York City generated $1.5 million per year in parent donations, and an elementary school within three miles of the same school had zero parent fundraising. These were common trends salient through intra-district school communities.

Parent-teacher association groups spent the revenue acquired from different sources in multiple ways. The PTA groups assisted in purchasing things for the school which were not

covered in the school budgets such as computers for classrooms, library books, playground equipment, flowers, training for teachers, after-school programs, and furniture (Bryant,2001). Portland Public Schools in Oregon used redistributed fundraising revenue for after-school math intervention teachers, classroom Chromebooks, and student enrichment activities (Weese, 2018). Jaffe (2022) relayed schools used the funding for books, teachers, renovations, technology, and ballroom dancing lessons. Some schools used PTA revenue for coaching salaries, teachers, student trips, labs, sport uniforms, parties, and teacher appreciations (Milgrom-Elcott, 2020). Affluent schools spent their fundraising revenue in multiple ways to supplement their budgets.

The PTA groups in various districts addressed the PTA group revenue discrepancies in a variety of ways. Brown et al. (2017) described different interventions to distribute funds equitably within a school district such as: assessing the needs of every school, supporting partnerships across all socioeconomic groups, and implementing an approach to provide an equitable distribution. An equitable distribution entailed creating an equity fund, imposing restrictions, incorporating donations into the school budgets, and promoting donations that benefit the entire school district (Brown et al., 2017). Weese (2018) explained how the suburban Edgar Road Elementary School hosted a book fair fundraising and sent the dollars 12 miles away to Farragut Elementary School that was 99 percent free and reduced lunch. Another suburban school in Houston (Frostwood Elementary School) hosted a carwash annually, and they sent the proceeds to Housman Elementary School an impoverished school that is seven miles away and consists of 90 percent free and reduced lunch (Weese, 2018). Hawthorn School District in the northwest side of Chicago fundraised and pooled the money together to redistribute it on a per student basis (Weese, 2018). Portland Public School Board in Oregon established a framework to share the wealth where they retained one-third of the fundraising dollars over $10,000 in a fund,

and then they used a formula to redistribute the money to the schools with the greatest need (Weese, 2018). Morton (2021) identified a school district where parents agreed that the affluent elementary schools directed three percent of their fundraising to the less privileged school and sponsored certain student and teacher events. Some people debated that the high-poverty schools already received additional federal funding through Title I, but others argued that those funds helped those schools attain an equitable and basic access (Morton, 2021). Jaffe (2022) discussed a collaborative fundraising initiative in the Evanston School District in Illinois that assisted in intra-district funding discrepancies by allowing assistance to schools in need.

Articles and research delved into the equity issues affiliated to the PTA groups in various school districts. The common theme was a lack or decreased amount of funding from the state level which created financial voids where parents had to generate revenue in sustaining programs or providing additional resources (Weese, 2018). An example, Oklahoma decreased the education budget and used the lottery to supplant and not enhance state funding (Blatt, 2017). The manipulations to the education budgets created equity issues because some schools have parents with the financial means to offset those disparities.

Theoretical Framework

The combination of the following theoretical frameworks allowed for a comprehensive understanding of PTA groups within the school system. The PTA groups operated on the premise of assisting all students. Equity, social justice, and critical resource theory embodied the values and framework for an inclusive set of ideologies to aid students in experiencing the same school-sponsored activities within a school district. The development and creation of equitable opportunities using PTA group resources can possibly enhance students' overall learning.

Equity Framework

The concept of educational equity emphasized equalizing economic advantages in accruing education by providing students with the necessary resources to optimize learning (Burroughs, 2015). This entailed supplemental resources (e.g., monetary and quality teachers), educational opportunities, and learning experiences. The equity framework aligned with the justice framework where the concepts of adequacy and equity were contrasted in justifying an appropriate means of what constituted an appropriate education (Pijanowski, 2015). Equitable funding acknowledged the differences between students and schools, but the circumstances highlighted the necessity for additional resources to certain groups to have academical gains (Kaplan and Owings, 2023). The equity framework was not an egalitarian or socialistic concept. As a united school district, there were fundamental moral obligations to ensure every student was afforded shared educational opportunities despite the families' financial capabilities. Each school site had a PTA group operating independently possibly creating disparities in resources which can affect the quality of education or school experiences. Verstegen and Driscoll (2008) expressed that through vertical equity students with dissimilar situations should be treated differently through additional funding. The quality of education should not be predicated on their families', neighborhood, and local wealth. The equity framework was used to identify and address the inequities within the school sites and between school sites.

School districts have a professional obligation to provide every student within their school district an equitable opportunity of learning as described by the 2018 NELP (National Educational Leadership Preparation) standards. This entailed shared educational experiences, educational resources, and educational expectations. Districts share a moral obligation in

providing equitable school practices, processes, and outcomes for the spectrum of learners from different racial, socioeconomic, gender, cultural, disability, and sexual orientation backgrounds (Otunga, 2009). The concept of equity espoused an intra-district necessity to facilitate an equitable learning environment for all students residing within the school district. Studies have shown intra-district discrepancies existed from racial, educational, and metropolitan lines (Burke and White, 2001). Webb (2017) had shown under-resourced schools were primarily attended by minorities and low socioeconomic status students. Lack of resources is defined not in terms of material or quantities of teachers but rather quality of teachers and educational experience. Owings and Kaplan (2010) pointed out schools with a higher level of poverty and minorities employed teachers with lower salaries, less experience, and fewer credentials. The concept of equity was applied to ensure students were afforded shared educational opportunities sponsored by PTA groups in every neighborhood of a single school district. Through the relational commitment between schools within the district, a cultural shift in decreasing educational gaps relating to school-sponsored events and student learning were perpetuated. The concept of equity queried how and why these inequalities exist and provided a framework to dissolve the differences between school PTA groups.

In addressing the equity issues plaguing intra-district distribution of resources, the term equity cannot overlay equality. Castelli, Ragazzi, and Crescentini (2012) discussed the need to understand where the concept of equality ends and where "fair" inequality begins. Those authors formulated the question around evaluating the quality of the outcomes and the treatment. Equity incorporated various facets of educational resources which included PTA group contributions to provide students with shared educational opportunities within the school district. The equal

opportunity strategy addressed the inequitable circumstances related to material resources, parental support, cultural background, and health (Castelli et al., 2012).

Murray et al. (2019) referenced the concepts of bridging and bonding social capital to understand equity within the school system. Understanding their study needed the clarification of the main terms of social capital, bridging social capital, and bonding social capital. They described social capital as the relationships between groups of people. Bridging social capital entailed the relationships between individuals associated with different social networks. Bridging encompassed sharing resources and knowledge. Whereas bonding is characterized as a strong, cohesive relationship between peer networks such as families, church groups, etc. Bonding involved people in close proximities who developed a connection through mutual social interests. Murray et al. (2019) found elementary schools where both concepts of bridging and bonding properties were coupled exuded the highest levels of equity. The schools possessed a greater role in nurturing the educational culture to ascertain both social capitals (Murray et al., 2019). PTA groups could adopt this concept with sharing of resources and ensuring other schools' students were afforded the same opportunities.

Freemon (2012), a PTA president, wrote an article detailing the success of the PTA program at her elementary school in Glendale, California. She focused on optimizing the parent membership to unite every group affiliated with the school. Freemon (2012) credited the success of her PTA membership to connecting families to the school. In addition, visibility was essential in creating transparency and keeping families informed of the various school activities. She found parents wanted to feel valued no matter their level of participation or difference in backgrounds. Through the parental involvement, the parents were inclined to engage and actively participate in school activities. This study used the

PTA group information to examine equity, adequacy, and learning opportunities within intra-district elementary schools. The data highlighted revenue discrepancies while offering remedies to improve and change the current operating system.

Social Justice Framework

The discussion of social justice centers around the work provided in John Rawls's theory of justice (Rawls, 1971). Rawls (1971) centered his research around the fundamental principles of justice in which entailed morality and justness within a society. Morality focused on social and economic advantages benefitting everyone. Justness centered on the guaranteed rights of everyone to have extensive rights comparable to the opportunity of others regardless of race, creed, sex, etc. Rawls's (1971) theory of justice described a distributive form of justice towards various marginalized groups. His theory was based on other individual's principles of justice or social contract thinkers such as Thomas Hobbes and John Locke. Rawls's theory was applicable to PTA groups in considering all students within the school district.

Theory of social justice was another theoretical framework coupled with the theory of equity. Theoharis (2007) defined social justice leadership in terms of advocating for the acknowledgement and elimination of the marginalization in the schools. Marginalized groups entailed issues of race, gender, class, sexual orientation, disability, and any other conditions where students were disproportionately represented. Theoharis (2007) found leaders enacted social justice through several means: raising student achievement, improving school structures, recentering and enhancing staff capacity, and strengthening school culture and community. A viable feat for PTA groups was strengthening the district cohesiveness through collaborative efforts between schools particularly in sharing resources.

Critical Resource Theory

Critical resource theory was a perspective on educational funding that offers an insight of increasing fairness and opportunity in a society which systematically advantaged a dominant group with resources opposed to limiting resources to a disadvantaged group (Kaplan and Owings, 2023). Research has shown that schooling resources based on the amount and the spending of money on students can increase student achievement (Baker, 2018). Statistics identified that 10 percent in per-pupil spending in high-poverty schools can increase achievement test scores, lower dropout rates, higher adult earnings, and reduce adult poverty by a percentage (Jackson, Johnson, and Persico, 2016).

Rorrer (2006) relayed leaders do not ponder whether equity was achievable, but rather how equity was achieved. The mindset heightened the level of expectations for all students instead of focusing on a select few who were underperforming. Disrupting the status quo of addressing equity resulted in changing the culture and commitment to the values exuded by a school district. Rorrer (2006) addressed how a PTA president referenced at-risk students as "those" kids when discussing a redistricting initiative. A shift in the traditional paradigm included creating a unified district culture opposed to an individualistic site-based one. Leadership was important in implementing changes and following through on antiquated practices.

Equal division of resources was not individually rational for those possessing more (Schmidt, 2015). Schmidt (2015) demonstrates through an economics game the connection between economic policy choices and moral questions. An assumption entailed more affluent school sites compromised some of their activities, resources, and experiences to support their sister schools who were less fortunate. Redistributing resources to economically challenged

schools minimally affected the affluent schools since the resources were pulled from several prosperous school sites and not just one. The equity framework entailed a communal effort within the district to ensure optimal learning for every student.

Christen A. Cohoon (2021) conducted a study on intra-district equity by examining the relationship between per-pupil expenditures in five middle schools in Virginia. The research covered the equity in school variations and per-pupil expenditures using an equity audit. The researcher used horizontal and vertical equities to convey the distribution of resources to provide access to fair and adequate educational experience (Cohoon, 2021). The study discussed how marginalized students such as students of color, disabilities, poverty, and English Language Learners were disenfranchised in public schools (Cohoon, 2021). Resources allocations showed through multiple studies to correlate with student outcomes (Ballard and Maiden, 2018; Betts, Rueben, and Danenberg, 2000).

Equity Audits

Equity audits assessed the fairness in the school policies and practices that directly affected students (Skrla, Scheurich, Garcia, and Nolly, 2004). They brought attention to disparities in educational learning and opportunities. These audits were based on a history of enforcing civil rights in the United States (Skrla et al., 2004). Equity audits were used to identify achievement gaps among student groups such as socioeconomic, race, etc. Many research articles were written along with court cases about these educational gaps, but the gaps persisted. Skrla et al. (2009) conveyed that equity audits assist leaders in identifying and addressing these gaps.

The educational gaps were mitigated at the state levels from court cases and legislation based on budget formulas. Every Student Succeeds Act (ESSA) was passed in 2015 to create

more financial transparency within school districts. At the district and school levels, equity audits were a resource in providing feedback and intel on systemic trends. Skrla et al. (2009) highlighted three categories of education: teacher equity, programmatic equity, and achievement equity. Teacher equity included teacher education, teacher experience, teacher mobility, and teacher quality. Programmatic equity referred to special education, gifted and talented, bilingual education, and discipline. Achievement equity entailed state achievement tests, dropout rates, graduation tracks, and SAT/ACT/AP/IB performance. This study added an economic equity variable while using teacher equity (teaching experience) and programmatic equity (gifted and talented) at intra-district elementary schools. Teaching experience was linked to positive student outcomes (Kini and Podolsky, 2016). Economic equity focused on the PTA revenue, school poverty, and economically disadvantaged. Focusing on the budget and PTA revenue in the elementary schools was the primary goal in performing an equity audit in the anonymous school district.

In conclusion, this study gathered data for each elementary school to examine economic equity from PTA revenue coupled with teacher equity and programmatic equity. Demographic and financial data were collected to establish a baseline for each school site. Student information entailed enrollment, PTA memberships, total school budgets, PTA revenue, economically disadvantaged percentages, and gifted/talented percentages. Teacher experience provided personnel data. Finally, this study gathered data for each elementary school to assess teacher equity, programmatic equity, and economic equity to determine any inequity by answering the following questions:

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

Chapter 3

Research Design

<u>Introduction</u>

The purpose of this study was to use an equity audit (Owings and Kaplan, 2023) to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous school district in Oklahoma to determine the effect on the per-pupil spending. Analyzing the per-pupil instructional expenditure and PTA revenue can provide information about the equity within the school district. Different facets of equity such as horizontal, vertical, and wealth neutrality detail the financial disparities or congruences between schools. Other variables such as PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience coupled with per-pupil instructional expenditure and PTA revenue allowed a broader assessment of the equity. Using equity measurement tools described later in this chapter, a thorough analysis of the equity between schools within the same school district could occur.

The school district was a public school accredited by the Oklahoma State Department of Education. The district consisted of three high schools (9th to 12th grades), six junior highs (7th to 8th grades), and twenty-five elementary schools (pre-K to 6th grades) (OEQA, 2019). The suburban school district was covered by 125 square miles with approximately 138,339 residents with an average income of $81,607 (OEQA, 2019). Oklahoma statewide had an average income of $70,262 according to the OEQA 2019 report. The school district had 7.6 percent of the residents below the poverty level where Oklahoma overall had 16.0 percent (OEQA, 2019). The data compared the level of poverty with the state of Oklahoma. The overall percentages of the

demographics in the district and the state were in Table 3.1. Though this study does not examine the effect between funding and demographics, it provided baseline information for future studies.

Table 3.2 showed the percentages of the different sources of revenue for the school district. The district budgets were weighted for grade level, special education, bilingual students, gifted/talented, economically disadvantaged, and other weights which were not included in this study's economic analysis, but they were important in identifying other variables affecting the funding levels. Oklahoma used a multi-tiered distribution formulae to address the fiscal equity by providing more resource-poor local districts a greater share of the formula funding (Maiden, 2019).

Table 3.1

Student Demographic Percentages (OEQA, 2019)

Ethnic Makeup	District	State
Caucasian	47.2	48.5
Black	7.0	8.5
Asian	5.5	2.4
Hispanic	17.6	17.7
Native American	4.1	13.1
Two or More Races	18.6	9.8
Totals	100.0	100.0
Gender Makeup		
Female	48.6	48.7
Male	51.4	51.3
Totals	100.0	100.0
Bilingual Students	8.8	12.7

Table 3.2

Sources of District Revenue Percentages (OEQA, 2019)

	District	State
District	42.6	39.4
County	2.7	2.5
State Dedicated	6.0	7.1
State Appropriated	41.6	40.4
Federal	7.1	10.6
Totals	100.0	100.0

The analysis provided insight into the financial information at each individual elementary school site within a school district by broadly exploring PTA funding and budget records. The data gathered for the study cannot account for the tangible resources donated by individual parents who support their children's school, but the collection of the PTA financial information captured the overall revenue generated at each school site to give a generalized overall outlook. The PTA data coupled with per-pupil instructional expenditure allowed greater insight into the equity between the school district's elementary schools. The conceptual framework of this study was influenced by horizontal and vertical equity measures (Owings and Kaplan, 2010; Verstegen and Driscoll, 2008; Carr et al., 2007). Skrla et al. (2009) discussed different indicators of equity and categorized them into three groups: teacher equity, programmatic equity, and achievement equity. This study used teacher equity (teacher experience) and programmatic equity (special education and gifted/talented), but it substituted economic equity (instructional expenditure and PTA revenue) in place of the achievement equity Skrla et al. (2009) used when examining intra-district equity. The complexity of measuring the effects of PTA revenue on student outcomes was not the focus of this study.

Methods

A revenue equity audit research design structure encapsulated by the social justice design (Skrla et al.,2009; Creswell, 2015) used to examine multiple elementary schools in one anonymous suburban school district. The equity audit assessed the fairness in the school policies and practices that directly affects students which in this study looked specifically at the instructional expenditures and PTA revenues (Skrla, Scheurich, Garcia, and Nolly, 2004). The purpose was bringing attention to disparities within educational learning environment and learning opportunities. Social justice design included Rawl's (1971) work on fundamental principles of justice that entailed a moral element of economic advantages benefitting everyone.

The researcher chose to examine a specific suburban school district with 25 elementary schools to attain a generalized data source for future studies. The study should illustrate the effect of PTA group revenues on the overall elementary school budgets. Quantitative statistics from OCAS (2019) and OEQA (2019) provided all the baseline data for each school site. The assessment of the degree of equity is measured using standard resource accessibility and wealth neutrality measures to include the bivariate coefficient of variation, Gini Coefficient, Theil index, McLoone Index, and coefficient of determination (Maiden, 2019). A multiple regression test determined if a significant relationship exists between the dependent variables and the independent variables.

Data

There were no participants involved in the research. Public information was provided by the PTA members who were queried for the financial and activities information (Appendix B), the website OEQA (2019), and the website OCAS (2018-2019). Because of the sensitivity of data collected, the elementary schools were referenced with generic names as descriptors, so the

integrity and truthfulness of the information was genuine. Protecting the anonymity of the schools, the district, and participants is necessary for the ethical purposes for this study. The quantitative data were secured from the PTA groups and from the financial open records at the Oklahoma State Department of Education websites to gain an insight into the amount of revenue available for each school. The elementary school sites were identified independently of each other, and their socioeconomic statuses were determined by the percentage of free/reduced lunches. Additionally, PTA memberships, gifted/talented percentages, special education percentages, and teacher experience at each elementary school site assisted in highlighting the effects of additional programs.

Obtaining 2018-2019 elementary school site information on demographics such as economically disadvantaged (free/reduced lunch), PTA membership, PTA revenue, teacher experience, and school-site instructional expenditures focused on the statistical data. Databases about the individual school finances were secured through PTA data sources and the Oklahoma Department of Education websites for public statistical information, OCAS (2019) and OEQA (2019). Each PTA group for the elementary school sites provided the cumulative amount of revenue reported each year to the Internal Revenue Service. The PTA financial data does not include non-monetary resources.

Quantitative Analysis

The statistical data used to analyze the per-pupil instructional expenditure for each elementary school in the anonymous school district were provided in the next chapter. The PTA groups provided the financial information on PTA revenue and number of memberships to gain an overview of the influence of the PTA groups at each elementary school site. Several statistical tests were tabulated through the Statistical Package for the Social Sciences (SPSS) (Version 29)

statistical analysis software and other online equity calculators to assist in determining whether the relationships between the data sets were statistically significant. The equity measurements consisted of the coefficient of variation, Gini Coefficient, Theil Index, McLoone Index, coefficient of determination, and a multiple regression test (Kelly, 2014; Maiden, 2019; Ravid, 2014). A multiple regression determined if a statistical relationship exists between the variables (per-pupil instructional expenditure and PTA revenue) and other variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience). The multiple regression test was more precise than the correlation test, and it highlighted the specific variable(s) with a statistically significant effect.

Equity Assessments

The total yearly school instructional expenditures and the PTA site-level revenues were used to assess the revenue equity at each of the elementary schools. The information analyzed included three different categorical levels: whole district per-pupil instructional expenditures, whole district per-pupil PTA revenue expenditure, and whole district per-pupil instructional expenditure combined with per-pupil PTA revenue. The statistical measures were listed and described below.

- *Coefficient of variation*: The coefficient of variation (*CoV*) is a univariate statistic that is the standard deviation (σ) divided by the mean (μ) (Kelly, 2014). It ranges from 0 (no inequity) and 1 or higher (high levels of inequity).

$$CoV = \frac{\sigma}{\mu}$$

- *Gini Coefficient*: Gini Coefficient is a bivariate wealth neutrality statistic that helped to measure statistical dispersion across the distribution (Maiden, 2019). The Gini Coefficient used a line graph to show a straight line of equity which was represented by *x* equals *y*

(perfect equity). The *A* represents the area between the line of equity and the Lorenz Curve (lowest level of wealth below the line of equity). The *B* represented the area below the Lorenz Curve which represented the "actual" distribution of revenue over the population of students (Kelly, 2014). It ranged from 0 (no inequity) to 1 (high inequity).

$$\frac{A}{(A+B)} = 1 - 2B$$

- *Theil Index*: The Theil Index (*T* statistic) measured economic inequality or financial fairness (Kelly, 2014). It was calculated from the ratio of individual figures to average figures. The *n* equaled the number of individuals in the population (so 1/*n* represents every individual's share of the over *T*). The v_i equaled the value of the "achievement" variable (per-pupil amount). The μ equaled the population mean. The v_i/μ was the ratio of individual to average. The Theil Index was scaled from 0 (equal distribution) and positive/negative 1 (high inequity). A score of positive 1 indicated the individual value is greater than the mean which showed a greater per-pupil expenditure than the population. A score of negative 1 indicated a value less than the mean which showed a greater population than the per-pupil expenditure. A score of 0 showed perfect equity.

$$T_{indiv} = \sum_{i=1}^{n} \left[\left(\frac{1}{n}\right) \cdot \left(\frac{v_i}{\mu}\right) \cdot \ln \left(\frac{v_i}{\mu}\right) \right]$$

- *McLoone Index*: McLoone Index (McL) is the ratio of the total amount spent below the median amount to the amount needed to raise all the students to the median per-pupil amount (Maiden, 2019). It was used primarily to examine the fairness of expenditures especially when the disadvantaged group is the focus (Kelly, 2014). The McLoone Index was calculated by taking the sum of the per-pupil expenditure for each school site below the median level divided by the sum of the number of each school site at or below the median times the

median expenditure (Kelly, 2014). The score increased as the distribution becomes more equal to the median.

$$McL = \sum \frac{(expenditure\ at\ or\ below\ the\ median)}{(Number\ at\ or\ below\ the\ median) \times (the\ median\ expenditure)}$$

- *Coefficient of determination*: The coefficient of determination is a percentage of the variability where one variable is attributed to the differences in another (Ravid, 2014). It gave a summary of the variance in the dependent variable with the independent (predictor) variables (Maiden, 2019). The independent variables were parents attending parent/teacher conferences, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience average. The independent variable data included the entire school district and the subsamples data. The values range from 0 (no inequity or variance) and not greater than 1 (high level of inequity or variance).

$$coefficient\ of\ determination = R^2$$

- *Multiple regression*: The multiple regression was used when two or more variables are predictors based on the assumption that the variable is correlated to a dependent variable (Ravid, 2014). The dependent variables were the per-pupil instructional expenditures and the per-pupil PTA revenue. The predictors or independent variables were parents attending parent/teacher conferences, economically disadvantaged percentages, gifted/talented percentages, special education percentages, teacher experience average, and teacher salary average. The correlation of the predictor variables with the dependent variable was referenced as multiple correlation (Ravid, 2014). This statistic allowed for the consideration of several predictor variables when one variable may not have the highest correlation to the dependent variable. The Y' equaled the predicted Y score, b equals slope (coefficient) of the predictor X, X equaled the score of the independent variable, a equaled the intercept or

constant, and ϵ equals the equations error term. The results ranged from 0 to 1.00 (R^2 or multiple correlations squared). The multiple regression was calculated by the formula (Ravid, 2014):

$$Y' = b_1 X_1 + b_2 X_2 + a + \epsilon$$

Understanding the relationship between PTA revenue and per-pupil budgets, the following questions were addressed using the above statistical measurements for equity:

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

The data analyzed by the equity tests in three different category levels were described in more detail through Table 3.3, Table 3.4, and Table 3.5 below:

Table 3.3

All 25 elementary schools per-pupil instructional expenditures only

coefficient of variation	the standard deviation of the per-pupil instructional expenditures divided by the mean of the per-pupil instructional expenditures.
Gini Coefficient	per-pupil instructional expenditures below the line of equity.
Theil Index	the student population of all the elementary schools and the per-pupil instructional expenditures.
McLoone Index	per-pupil instructional expenditure below the median per-pupil amount and divided by the sum of the number of each school site at or below the median times the median expenditure.
coefficient of determination	per-pupil instructional expenditure (dependent variable) paired with the independent variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience).
multiple regression test	the test determined if the predictor variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience) were correlated to the dependent variable (per-pupil instructional expenditure).

Table 3.4

All 25 elementary schools per-pupil PTA revenue only

coefficient of variation	consists of the standard deviation of the per-pupil PTA revenue divided by the mean of the per-pupil PTA revenue.
Gini Coefficient	per-pupil PTA revenue below the line of equity.
Theil Index	the student population of all the elementary schools and the per-pupil PTA revenue.
McLoone Index	per-pupil PTA revenue below the median per-pupil amount and divided by the sum of the number of each school site at or below the median times the median revenue.
coefficient of determination	per-pupil PTA revenue (dependent variable) paired with the independent variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience).
multiple regression test	the test determined if the predictor variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience) were correlated to the dependent variable (per-pupil PTA revenue).

Table 3.5

All 25 schools per-pupil instructional expenditure combined with PTA per-pupil revenue

coefficient of variation	consists of the standard deviation of the per-pupil instructional expenditures combined with PTA per-pupil revenue divided by the mean of the per-pupil instructional expenditures combined with PTA per-pupil revenue.
Gini Coefficient	per-pupil instructional expenditures combined with per-pupil PTA revenue below the line of equity.
Theil Index	the student population of all the elementary schools and the per-pupil instructional expenditures combined with per-pupil PTA revenue.
McLoone Index	per-pupil instructional expenditure combined with the per-pupil PTA revenue below the median per-pupil amount and divided by the sum of the number of each school site at or below the median times the median expenditure and revenue.
coefficient of determination	per-pupil instructional expenditure combined with per-pupil PTA revenue (dependent variable) paired with the independent variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience).
multiple regression test	the test determined if the predictor variables (PTA membership, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and teacher experience) were correlated to the dependent variable (per-pupil instructional expenditure combine with per-pupil PTA revenue).

Schools with higher percentages of students on free/reduced lunch were categorized as economically deficient schools. Schools with none to a small percentage of students on free/reduced lunch were classified as affluent. The information from the PTA groups determined the amount of revenue generated at each elementary school site. The affluence of the elementary school was an independent variable. The schools were divided into four categories: high-poverty schools have 70[1] percent or more students who qualify for free/reduced lunch, mid-high poverty schools were 50-69.9 percent of students who qualify for free/reduced lunch, mid-low poverty schools wer 25-49.9 percent of students who qualify for free/reduced lunch, and low-poverty schools were below 25 percent of students on free/reduced lunch.

Reliability and Validity

The information ascertained for the study came from the Oklahoma anonymous school district PTA and the Oklahoma State public websites. The reliability and validity of the information was based on the district self-reporting details and the PTA group records maintained at each elementary school site. The PTA data was limited at certain elementary sites due to PTA volunteer changes and/or loss of PTA records from the 2018-2019 academic year.

Limitations and Delimitations

The researcher acknowledged the limitations and delimitations within the research and out of the control of the study. Only twenty-five elementary schools in an urban district were studied. Specific data were analyzed at each school site. The fiscal data were from the public websites OCAS and OEQA which may have inconsistencies from school to school.

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[1] The baseline for high-poverty schools was set at 70 percent because the redistricting of the suburban school district seemed to inject affluence into schools that were considered higher poverty which can skew or mask the actual poverty in those schools. Also, the school district was impacted by a natural disaster that could affect the figures because houses were rebuilt, and the property values rose attracting new residents.

Also, the financial information from the PTA groups was limited due to PTA group turnover and attrition. The results were not meant to generalize beyond the studied elementary schools or school district. The rationale behind examining elementary schools in one fiscal year and in only one suburban school district was to bring attention to an alternative revenue source. The study provided a baseline for future research to use equity audits to examine PTA group revenue and determine the relationship with per-pupil budgets within a school district.

Assumptions of the Study

The researcher assumed that the anonymous school district followed the policies set by the Oklahoma Department of Education in reporting the data. The researcher assumed that the economic information and demographic information retrieved from the Oklahoma Department of Education websites (OCAS, 2019; OEQA, 2019) were accurate. The researcher assumed the information concerning the economically disadvantaged percentage reflected the poverty at each school site. The researcher assumed the PTA revenue was used for creating opportunities that enhanced learning at the schools. The researcher assumed the higher percentages of gifted/talented students, special education students, and economically disadvantaged students more revenue and services were provided at each school site, but another study requires incorporating those categories.

Summary

The purpose of Chapter 3 was to detail the research methodology, describe the data collection, and discuss the statistical procedures. Several equity measurements for evaluating equity at twenty-five elementary schools were used from Owings and Kaplan (2010), Carr et al., 2007, Maiden (2019), Kelly (2014), and Verstegen and Driscoll (2008). Horizontal and vertical

equities were evaluated (Owings and Kaplan, 2010; Verstegen and Driscoll, 2008; Carr et al., 2007). Fiscal neutrality was assessed based on the economic disadvantaged students at each school site (Owings and Kaplan, 2010; Verstegen and Driscoll, 2008; Carr et al., 2007). The students' data were acquired and grouped into categories of average number of students at each school site (as of fall October 2018), parents attending parent/teacher conferences, gifted/talented percentages, special education percentages, and teacher experience averages. The school budgets were not adjusted for horizontal or vertical equities. Instead, the total school instructional expenditure amounts were used in determining the per-pupil instructional expenditures at each school site. The purpose of the equity audit was to evaluate the allocation of resources. The information potentially aided in student achievement which is not the focus of this study. Determining the effect of PTA revenue on student achievement requires another study in reviewing student test scores or honor roll achievement.

Chapter 4

Research Findings

Introduction

The purpose of this study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous suburban school district in Oklahoma to determine the effect on the per-pupil spending. The distribution of per-pupil instructional expenditure and PTA generated revenue at the school sites were examined. The study used the frameworks detailed in Chapter 3 of an equity, social justice, and critical resource theory to examine equity across the elementary schools. Twenty-five elementary schools from a suburban school district were examined by the revised concepts of equity audits described by Skrla et. al. (2004). Other studies have shown increases in per-pupil amounts can potentially increase student learning development and achievement (Brown et al., 2017; Ballard and Maiden, 2018). The monetary increases were relevant to student opportunities based how the money is spent (Jefferson, 2005). The study attempted to answer the following questions.

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

The data were collected for each school site using the OEQA (2019) and OCAS (2019) data from the Oklahoma State Department of Education website and from the information provided by the PTA groups within the anonymous school district. The PTA groups could not provide PTA revenue data for all twenty-five elementary schools within the anonymous school

district. The revenue information was lost during the transitions of PTA leaderships. Parent-Teacher Association financial records were not maintained or retained at the state-level, district-levels, or site-levels. Each school-site PTA was a non-profit organization responsible for the retention of its own financial records. The only legal requirement was the PTA groups report the total revenue amounts to the Internal Revenue Services (IRS) (Federal Tax-Exempt Status 501(c)(3) Organizations). The PTA liaison for the anonymous school district was able to provide PTA revenue totals for fifteen of the twenty-five elementary schools.

The findings were presented in three sections. The first section described the student population at each elementary school to provide a visual representation. The second section compiled the data to illustrate the comparison of the financial figures, total numbers, and the student body/teacher composition at each school site. Those details included total enrollment, instructional expenditure dollars, number of PTA members, and PTA revenue dollars. Additional information gathered for each school site entailed parents attending Parent/Teacher conference percentages, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and average years of teacher experience. The final section was comprised of the equity measurements (coefficient of variation, Gini Coefficient, Theil Index, McLoone Index, coefficient of determination, and multiple regression) for each of the four categories: all twenty-five elementary schools' per-pupil instructional expenditures only, fifteen elementary schools' per-pupil instructional expenditures that provided PTA revenue data only, fifteen elementary schools' PTA per-pupil revenue, and fifteen elementary schools per-pupil instructional expenditure combined with PTA per-pupil revenue. All the schools were described below using the parameters listed from the Methodology chapter of this study.

Definition of Parameters

The data in Table 4.6 were used to calculate the per-pupil instructional expenditure and per-pupil PTA revenue for each elementary school in the anonymous school district (OEQA, 2019; OCAS, 2019). Student data included predictor variables (also referenced as independent variables) parents attending parent/teacher conferences, PTA memberships, economically disadvantaged percentages, gifted/talented percentages, and special education percentages. School personnel data entailed teacher experience (OEQA, 2019). Instructional expenditure was converted into per-pupil dollars by dividing the total instructional expenditure at each elementary school by the total student enrollment at each school (OEQA, 2019). Parent-Teacher Association revenue was converted into per-pupil revenue by dividing the total PTA revenue at each school site by the total student enrollment number.

Statistical Package for the Social Sciences (Version 29) was used to calculate the data for the multiple regression while Excel was used to calculate the median, mean, standard deviation in each of the four categories. Instructional expenditure revenue was used because the entire school budget used a weighted formula to account for the vertical equity adjustments for special population groups at each elementary school. Student demographic data were collected to provide a visual composition of the dynamics at each elementary school. The data were organized into four categories to compare the equity at each school: 25 elementary schools - instructional per-pupil expenditure, 15 elementary schools - per-pupil instructional expenditure, 15 elementary schools - per-pupil PTA revenue, and 15 elementary schools per-pupil instructional expenditure coupled with per-pupil PTA revenue. The equity audit consisted of several equity measurement tools to analyze the data: coefficient of variation, Gini Coefficient, Theil Index, McLoone Index, coefficient of determination, and the multiple regression test. The

categories changed from twenty-five to fifteen elementary schools because the data were not available at ten of the elementary schools during the time of this study.

Statistics and Data Analysis

Section 1

Section 1 provided a detailed description of the demographic information at each elementary school site. The tables and figures allowed a comparison and a visual presentation of the dynamics across all twenty-five schools. The total population at all the elementary schools in the school district was about sixty-three thousand students in the K-6 grades (OEQA, 2019). The tables and figures in Section 1 provided a percentage composition of each category of student information. The visual composition and comparison between each elementary school in this study may contribute to future studies in determining whether these demographical differences influence per-pupil instructional expenditure or per-pupil PTA revenue.

Table 4.1

Percentages of Student Demographics for all 25 Elementary Schools (OEQA, 2019)

School	Ethnic Makeup						Gender Makeup		Bilingual Students
	Caucasian	Black	Asian	Hispanic	Native American	Two or More Races	Female	Male	
School 1	55.9	3.6	0.7	12.6	3.2	24	50.4	49.6	4.1
School 2	51.1	5.5	3.1	18.2	2.8	19.3	48.6	51.4	4.6
School 3	59	8.2	1.1	12.5	3	16.2	49.6	50.4	3.2
School 4	46.9	8.2	1.7	18.3	5.1	19.8	46.8	53.2	9.1
School 5	54.3	7.2	1.0	14.7	3.6	19.3	47	53	3.2
School 6	43.6	4.9	16.8	17.3	2.6	14.8	50.8	49.2	13.5
School 7	48.2	4.9	9.2	14.1	3.2	20.4	51.1	48.9	7.3
School 8	28.8	11.8	8.9	34.7	2.7	13.2	51	49	21.7
School 9	41.3	5.6	21.1	14.6	3.6	13.8	43.2	56.8	19.4
School 10	56.5	6.8	3.7	9.9	2.5	20.5	45.9	54.1	2.5
School 11	42.1	8.3	0.6	32.1	1.9	15	49.5	50.5	12.8
School 12	41.9	8.7	0.9	26.9	3.8	17.9	47.1	52.9	12.4
School 13	36.0	10.9	4.2	27.0	5.2	16.7	43.9	56.1	14.3
School 14	51.2	4.9	1.6	18.9	3.8	19.5	49.6	50.4	3.6
School 15	55.0	4.6	6.8	9.8	4.1	19.6	47.9	52.1	6.1
School 16	44.8	7.1	2.4	22.5	4.3	18.9	46.1	53.9	7.7
School 17	44.4	6.4	10.8	14.9	4.2	19.3	50.8	49.2	12.5
School 18	47.7	5.9	3.9	15.8	3.7	23	51.2	48.8	6.1
School 19	30.4	12.3	3.5	34.5	2.6	16.7	52.6	47.4	13.3
School 20	37.0	15.7	4.3	18.3	4.5	20.2	48	52	5.6
School 21	55.0	1.2	7.2	13.1	4.5	19	50.1	49.9	7.4
School 22	49.1	4.9	0.9	18.9	4.5	21.7	44.6	55.4	5.6
School 23	64.0	2.5	1.5	9.9	3.3	18.7	48.5	51.5	4.3
School 24	50.5	4.1	14.1	12.1	4.3	15	45.7	54.3	10.5
School 25	51.3	6.0	1.8	14.8	5.4	20.7	43.8	56.2	4.8

Figure 4.1

Caucasian Race for 25 Elementary Schools (OEQA, 2019)
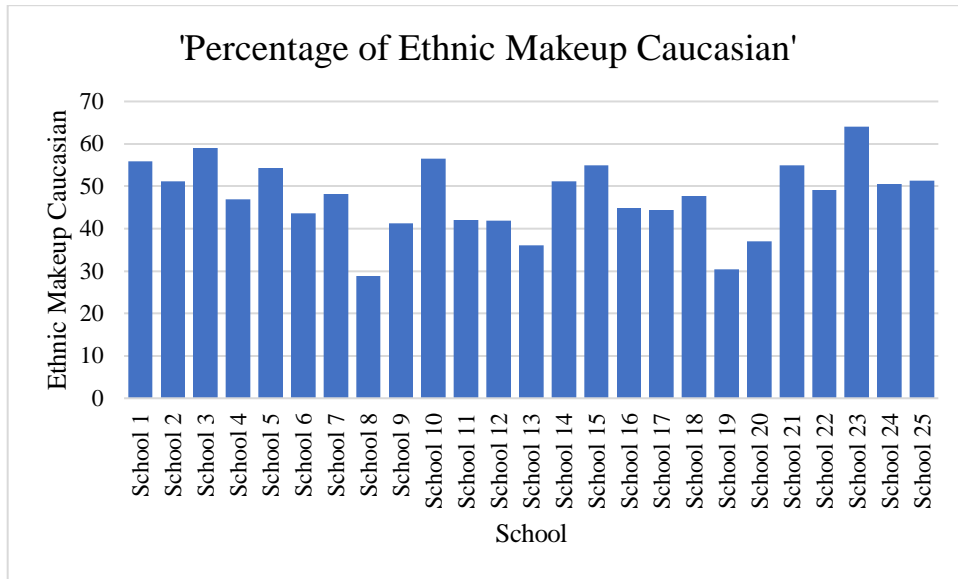
Figure 4.2

Black Race for 25 Elementary Schools (OEQA, 2019)
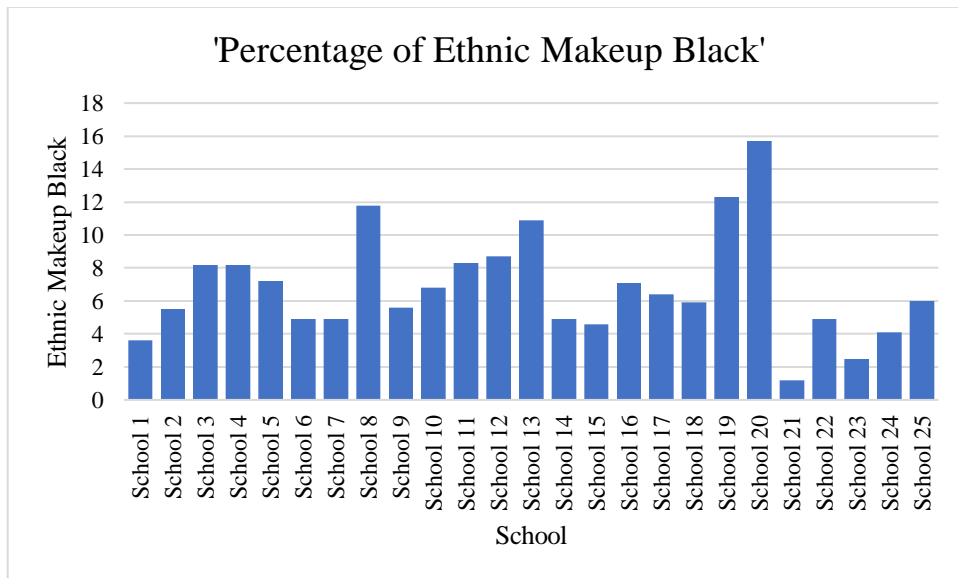
Figure 4.3

Asian Race for 25 Elementary Schools (OEQA, 2019)
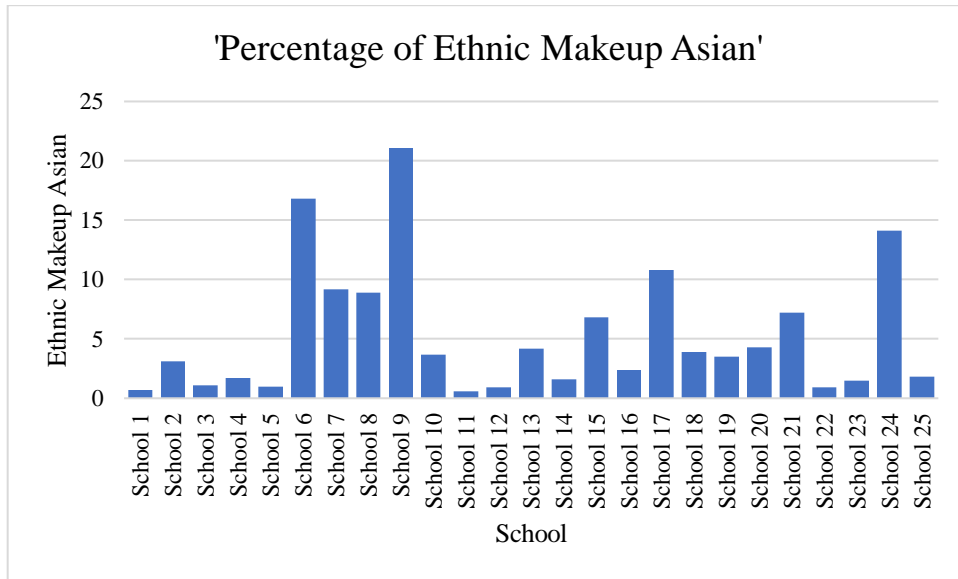
Figure 4.4

Hispanic Race for 25 Elementary Schools (OEQA, 2019)
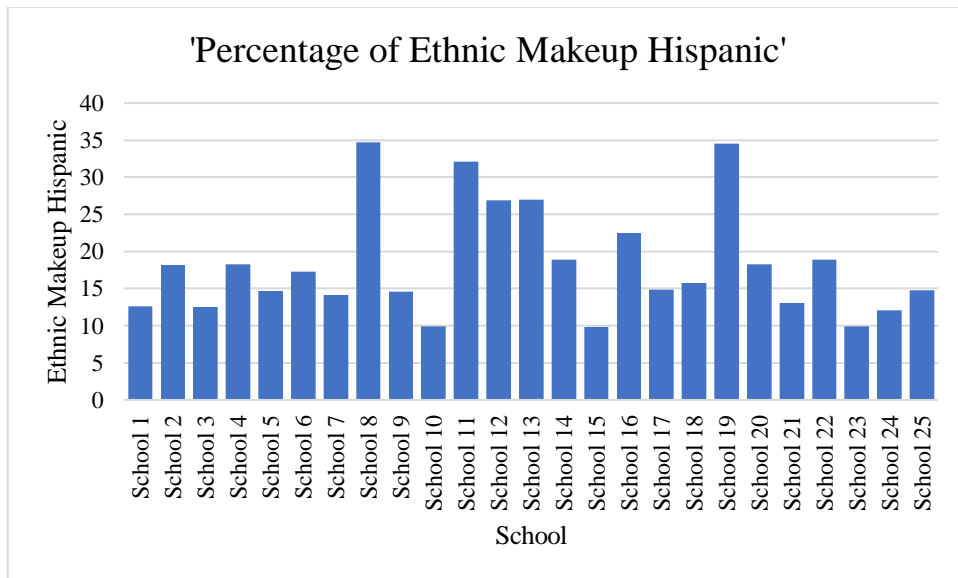
Figure 4.5

Native American Race 25 Elementary Schools (OEQA, 2019)

'Percentage of Ethnic Makeup Native American'
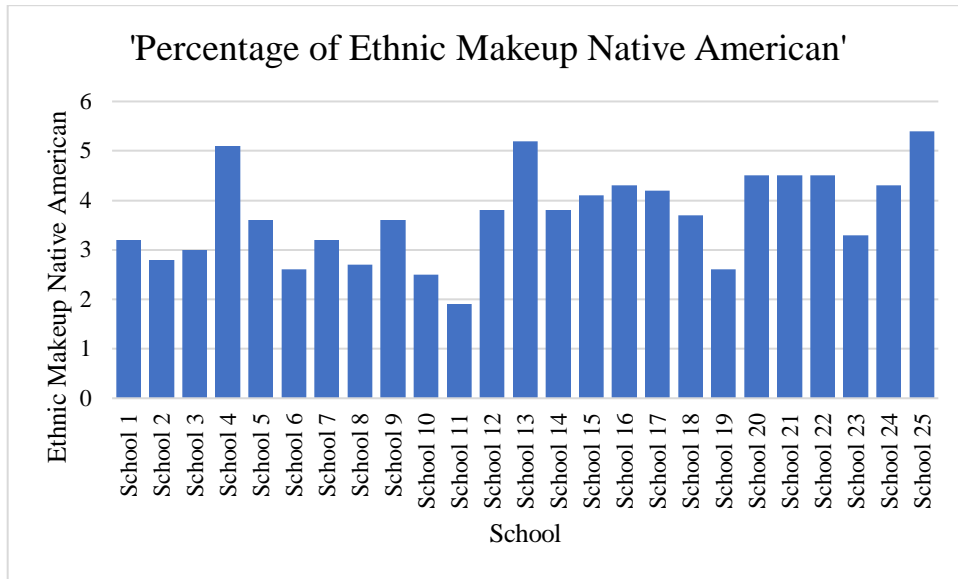
Figure 4.6

Two or More Races 25 Elementary Schools (OEQA, 2019)

'Percentage of Ethnic Makeup Two or More Races'
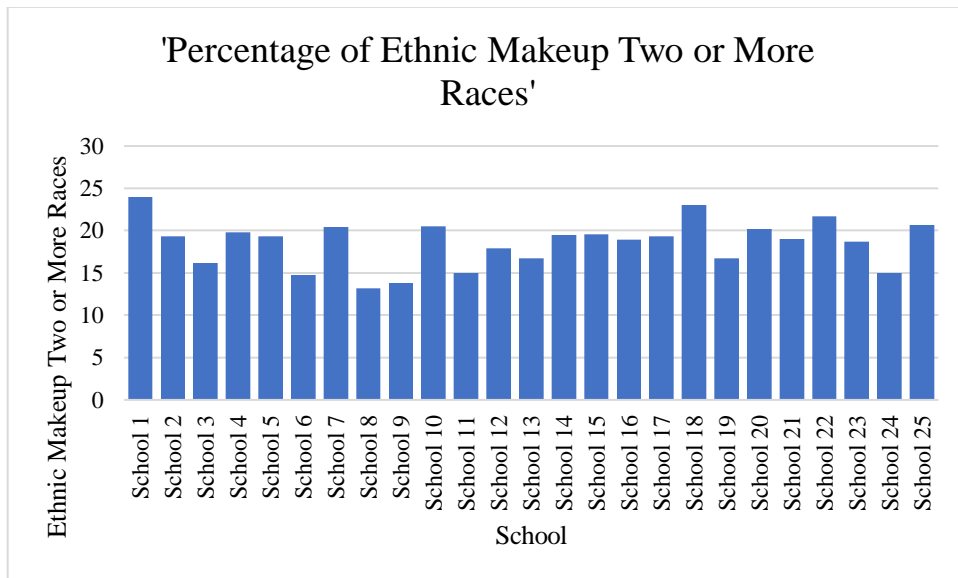
Figure 4.7

Percentage of Gender Makeup 25 Elementary Schools (OEQA, 2019)
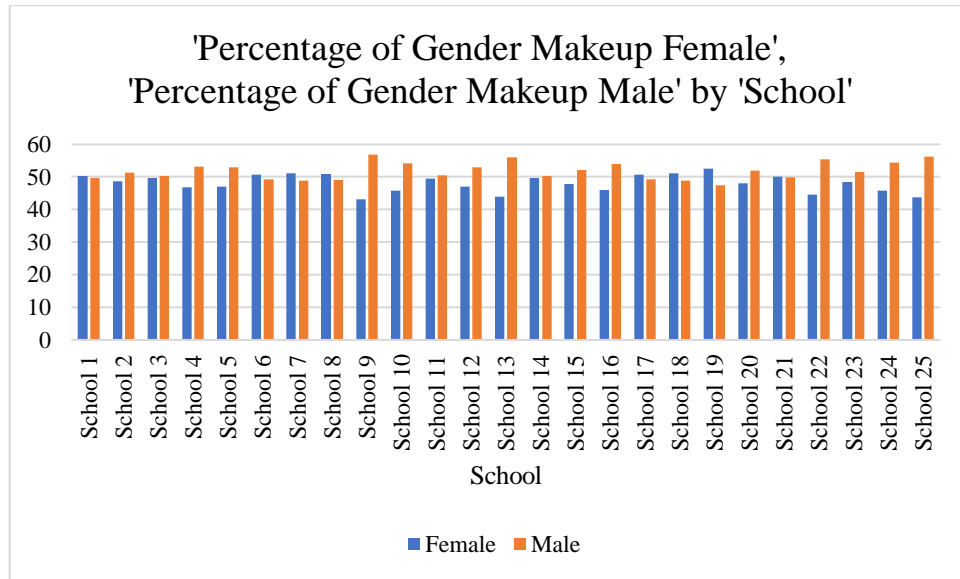
Figure 4.8

Percentage of Bilingual Students for 25 Elementary Schools (OEQA, 2019)
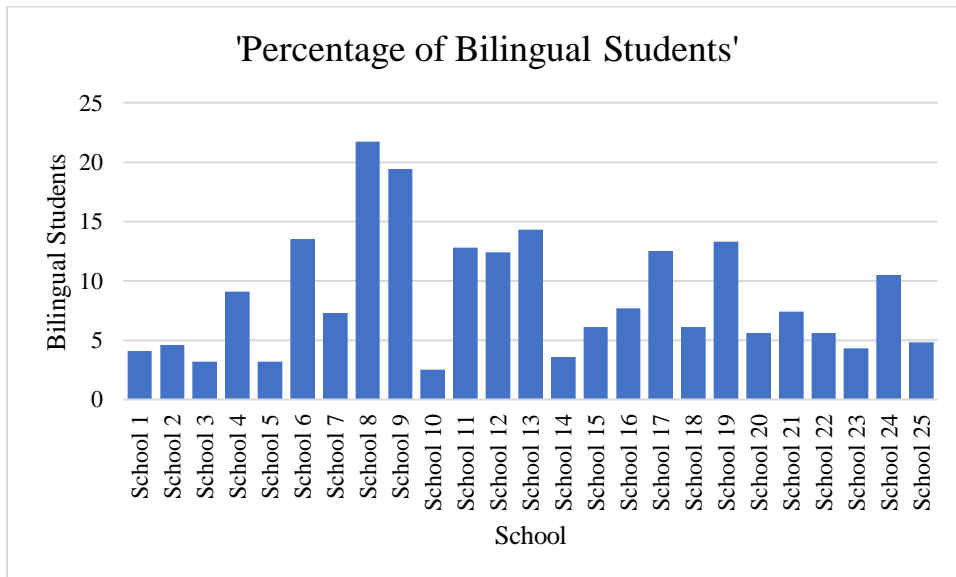
Section 2

The second section showed the financial makeup of the total and per-pupil revenue for instructional expenditures and PTA groups at each at each elementary school site. The questions in this study were answered through the collection of this data:

1. What is the difference between per-pupil instructional expenditures at each elementary school?

2. What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

Table 4.2 provided detailed information about the financial components of instructional expenditure and PTA revenue at each of the elementary schools. The total student populations were used to calculate the per-pupil amounts for both instructional expenditure and PTA revenue. The PTA memberships were gathered to show the numbers contributing and/or supporting the PTA initiatives at each elementary school site.

25 Elementary Schools Instructional Expenditure and PTA Data

Table 4.2

25 elementary schools for the 2018-2019 school year (OEQA, 2019; OCAS, 2019; PTA 2018)

School	Enrollment Number as of October 1st	Instructional Expenditure Total Budget Amount (USD dollars rounded)	Instructional Expenditure Per-Pupil Amount (USD dollars rounded)	PTA Revenue (USD dollars rounded)	PTA Per-Pupil Amount (USD dollars rounded)
School 1	562	2,450,939	4,361	22,757	40
School 2	615	2,600,855	4,229	-	-
School 3	697	3,004,732	4,311	124,315	178
School 4	650	2,688,940	4,137	76,664	118
School 5	726	3,298,514	4,543	61,182	84
School 6	614	2,703,678	4,403	103,814	169
School 7	411	2,033,503	4,948	-	-
School 8	706	3,029,103	4,291	31,605	45
School 9	412	1,990,867	4,832	-	-
School 10	628	2,444,046	3,892	-	-
School 11	539	2,560,494	4,750	33,979	63
School 12	346	1,836,914	5,309	-	-
School 13	497	2,095,888	4,217	47,753	96
School 14	365	1,871,053	5,126	-	-
School 15	560	2,351,400	4,199	92,864	166
School 16	466	2,374,520	5,096	54,042	116
School 17	455	2,595,042	5,703	99,961	220
School 18	457	2,245,051	4,913	-	-
School 19	652	2,773,285	4,254	-	-
School 20	465	1,947,999	4,189	31,285	67
School 21	685	2,635,994	3,848	106,486	155
School 22	576	2,860,044	4,965	-	-
School 23	598	2,118,348	3,542	116,486	195
School 24	588	2,658,560	4,521	79,450	135
School 25	705	3,192,499	4,528	-	-
Totals	13,975	62,362,268	113,107	1,082,643	1,847
Mean	559	2,494,491	4,524	72,176	123
Medians	576	2,560,494	4,403	76,664	118
SD	113(rounded)	409,942	498	34,225	57

Note. Totals, means, median, and standard deviation (SD) were calculated in Excel. Also, PTA total calculations only include data from 15 elementary schools.

Figure 4.9

Per-Pupil Instructional Expenditure (OCA, 2019)
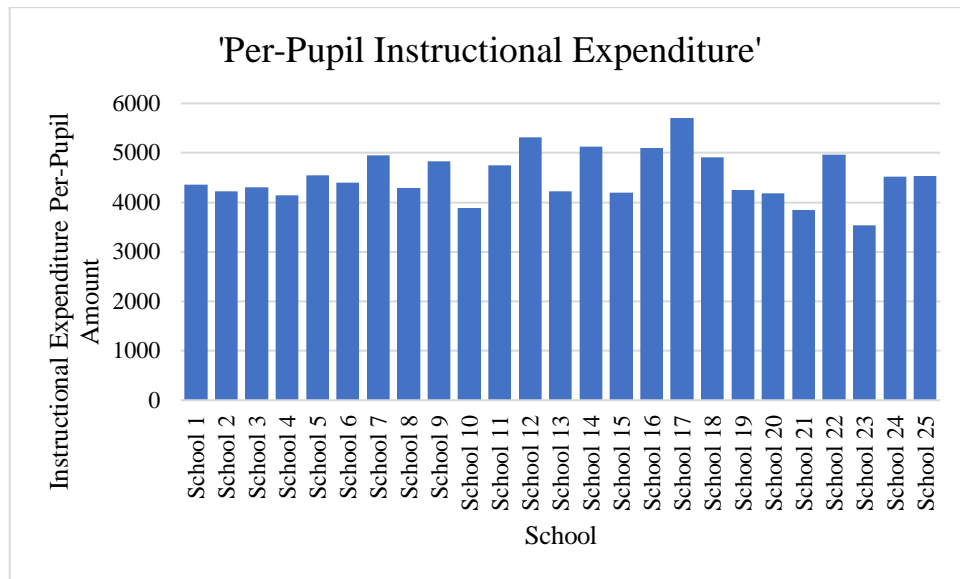
Figure 4.10 *Per-Pupil PTA Revenue (PTA records, 2018) (10 Schools-No Data)*
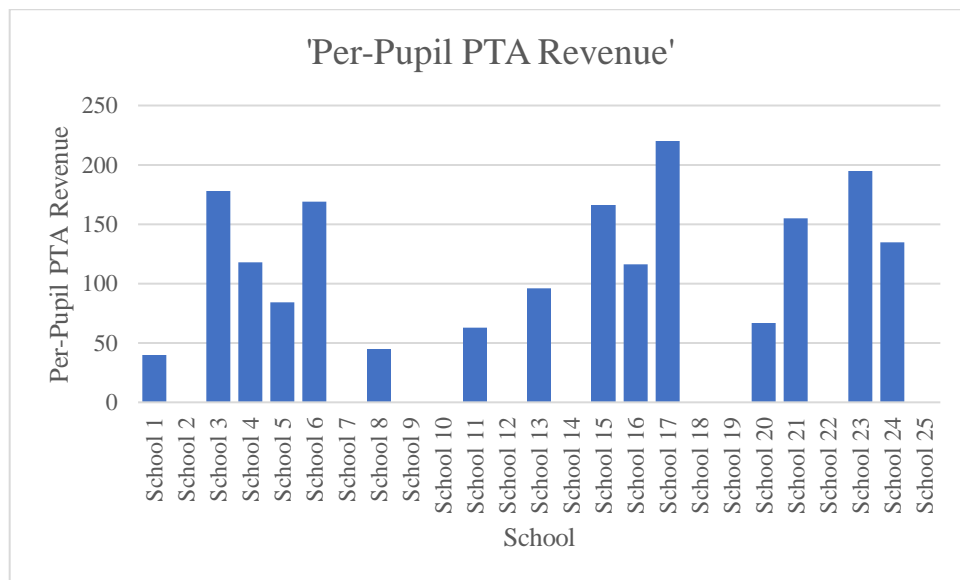
Section 3

Section 3 provided additional details through analyzing per-pupil instructional

expenditure and per-pupil PTA revenue in the equity measurement analysis. The analyses used

the per-pupil instructional expenditure and the per-pupil PTA revenue from Section 2 Table 4.2 to calculate the equity measurements.

The multiple regression analysis was used to illustrate the prediction in the relationship between the dependent variable (per-pupil instructional expenditure and per-pupil PTA revenue) and the independent or predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). The assumption was a linear relationship exists between the dependent variables and the independent variables. The R value or multiple regression provides the correlation between the dependent variable and the predictor variables. The R squared or coefficient of determination attributed the variation in the dependent variable to the independent/predictor variables. The adjusted R square statistic was used to illustrate the adjustment made to the correlation due to an increase in independent variables. The adjusted R squared meant the percent of the variance in the dependent variable is attributed to the independent variables. The SPSS calculated the Standard Error of the Estimate (SEE) which determined the accuracy in the prediction of the model to the actual data.

The Analysis of Variance (ANOVA) Model in SPSS produced the results from the multiple linear regression. The Sum of Squares in the data was affiliated with the variance in the model. The degrees of freedom (df) was associated with the different sources of variances in the model. The Mean Square was used to compute the F ratio which was used to test the significance of the predictors in the model. The F-value determined whether the independent variables can reliably predict the dependent variables. A p-value lower than .05 determined a statistically

significant effect. The p-value indicated that the independent variables can reliably predict the dependent variable.

The coefficient table in the regression model detailed the predictor variables. The B statistic meant for every one unit of change in the independent variable the dependent variable per-pupil instructional expenditure/per-pupil PTA revenue was affected. Only statistically significant relationships have p-values of .05 or less. The Beta results were standardized coefficients which placed all the variables on the same scale to determine which had the greatest effect. The t-value and Sig. conveyed whether the coefficients in the model were statistically significant. The Collinearity Statistics of Tolerance and variance inflation factor (VIF) indicated how much influence the predictor variables have on one another. The Residuals Statistics table detailed the error between predictive value and observed value of the data (or observed values minus predictive values).

Research Question 1:

What is the difference between per-pupil instructional expenditures at each elementary school?

Table 4.2 data were used to conduct the equity audit for per-pupil instructional expenditure in all 25 schools. Due to the lack of PTA revenue data received, an additional equity audit on the elementary schools' instructional expenditures was conducted separate for those fifteen schools that provided PTA revenue data. In Table 4.3, information was collected to determine the coefficient of determination and multiple regression models. The percentages were provided about parents attending parent/teacher conferences, economically disadvantaged students, gifted/talented students, and students in special education programs. Table 4.3 described the average years of teaching experience of the teachers at the school sites. The graphs

in Figure 4.11, Figure 4.12, Figure 4.13, Figure 4.14, Figure 4.15, and Figure 4.16 allowed a

visual comparison of all twenty-five school sites.

Table 4.3

Additional elementary information from the 2018-2019 school year (OEQA, 2019)

School	Number of PTA Memberships	Parents Attending Parent/Teacher Conference Percentage	Economically Disadvantaged Percentage	Gifted/Talented Percentage	Special Education Percentage	Teacher Experience Average
School 1	117	78	53	5.9	19.4	7.7
School 2	406	89	42.4	7.8	16.9	12.6
School 3	759	97	35.7	8.3	17.5	14.6
School 4	538	56	51.4	3.4	16.8	8.5
School 5	189	93	59.5	3.2	22.2	12.8
School 6	768	75	34.2	8.8	15	17.1
School 7	412	88	34.8	10.2	17.3	14.9
School 8	208	87	69.3	2.7	15.4	7.3
School 9	227	95	28.4	11.4	18.7	11.9
School 10	618	98	24.2	12.9	16.1	9.6
School 11	177	61	81.1	1.5	16.1	6.6
School 12	84	92	70.2	4.9	24.3	14.2
School 13	142	80	59.6	4.6	19.7	7.7
School 14	365	84	59.5	6	20.8	9.8
School 15	482	90	24.3	12.7	16.8	13.6
School 16	159	75	62	4.5	20.6	7.9
School 17	200	75	37.8	11.2	18.5	14
School 18	161	60	58.9	2.4	23.6	12
School 19	158	82	70.1	2.6	14.9	10.4
School 20	144	84	48.8	4.1	14	11.9
School 21	644	96	12.3	8.3	13.7	12.8
School 22	142	70	74.1	4	21.7	10.1
School 23	599	84	27.9	10.9	12.5	7.7
School 24	519	93	21.8	11.4	17.7	15.9
School 25	383	75	54.6	8.2	19	14.6
Totals	8601	2057	1195.9	171.9	449.2	286.2
Mean	344	82.28	47.836	6.876	17.968	11.448
Median	227	84	51.4	6	17.5	11.9
SD	217	11.7845945	18.8572683	3.59470444	3.06726262	3.03550106

Note. Totals, means, median, and standard deviation (SD) were calculated in Excel.

Figure 4.11 *Number of PTA Memberships for 25 Elementary Schools*

'Number of PTA Memberships'
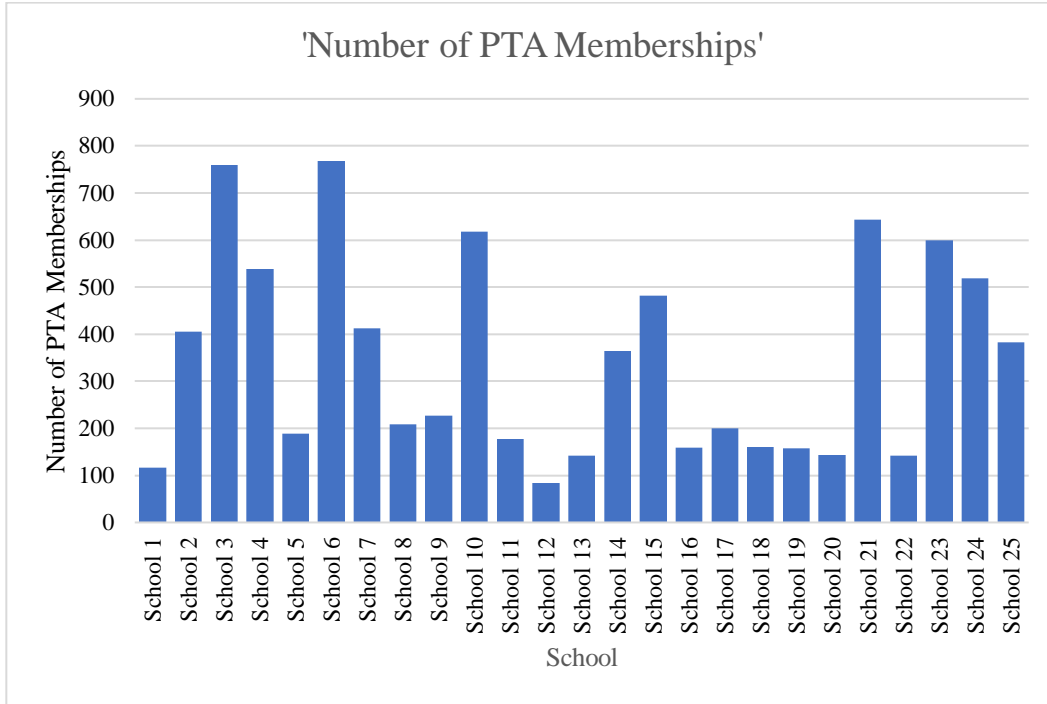
Figure 4.12

Percentage of Parents Attending Conferences for 25 Elementary School

'Parents Attending Parent/Teacher Conference Percentage'
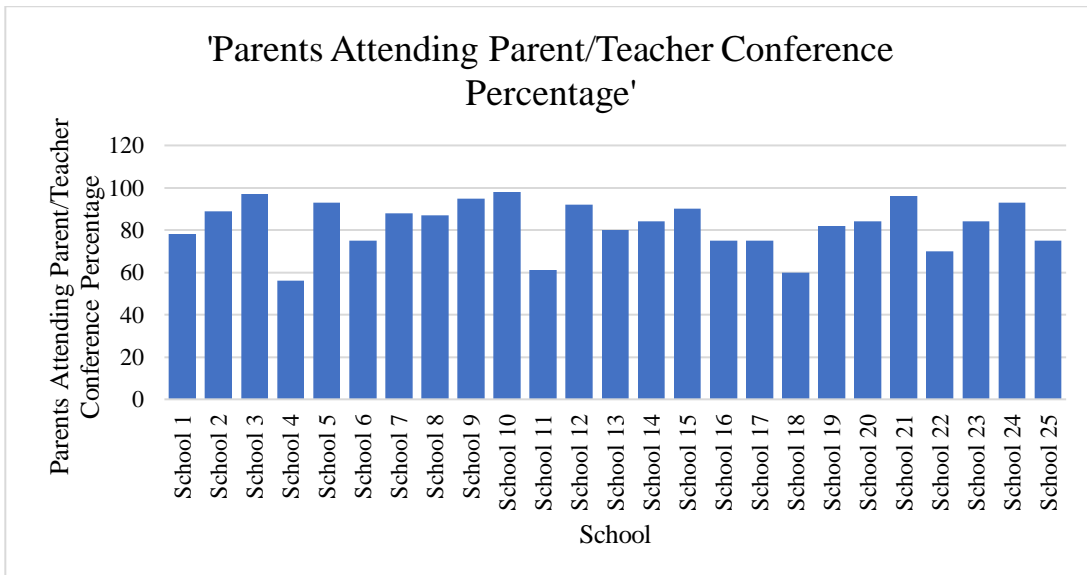
Figure 4.13 *Percentage of Economically Disadvantaged Students for 25 Elementary Schools*
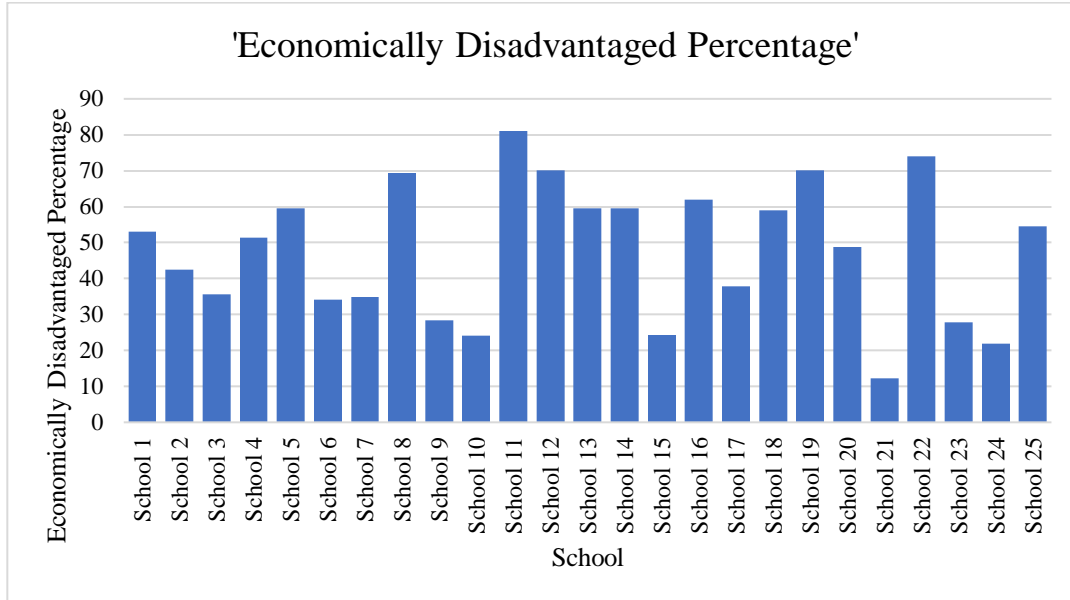
Figure 4.14 *Percentage of Gifted/Talented Students for 25 Elementary Schools*
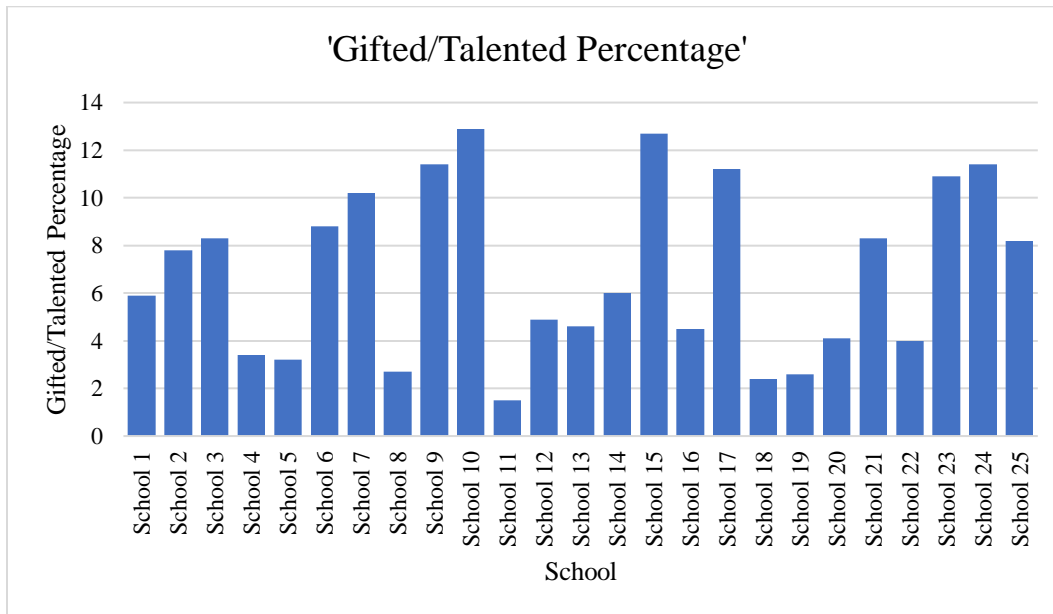
Figure 4.15 *Percentage of Special Education Population for 25 Elementary Schools*
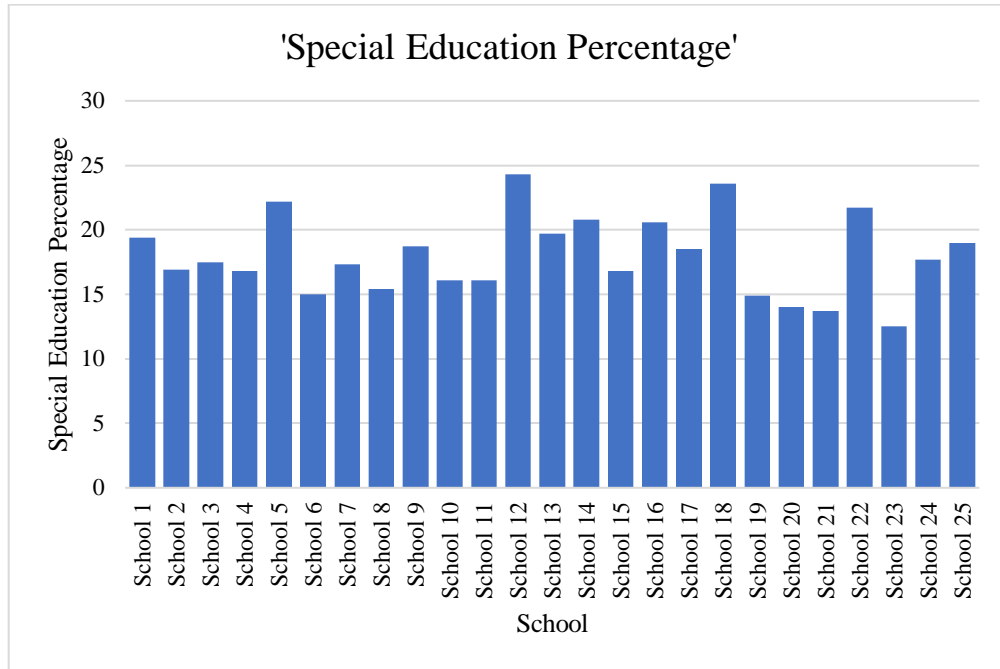
Figure 4.16 *Average Teacher Experience Year for 25 Schools*
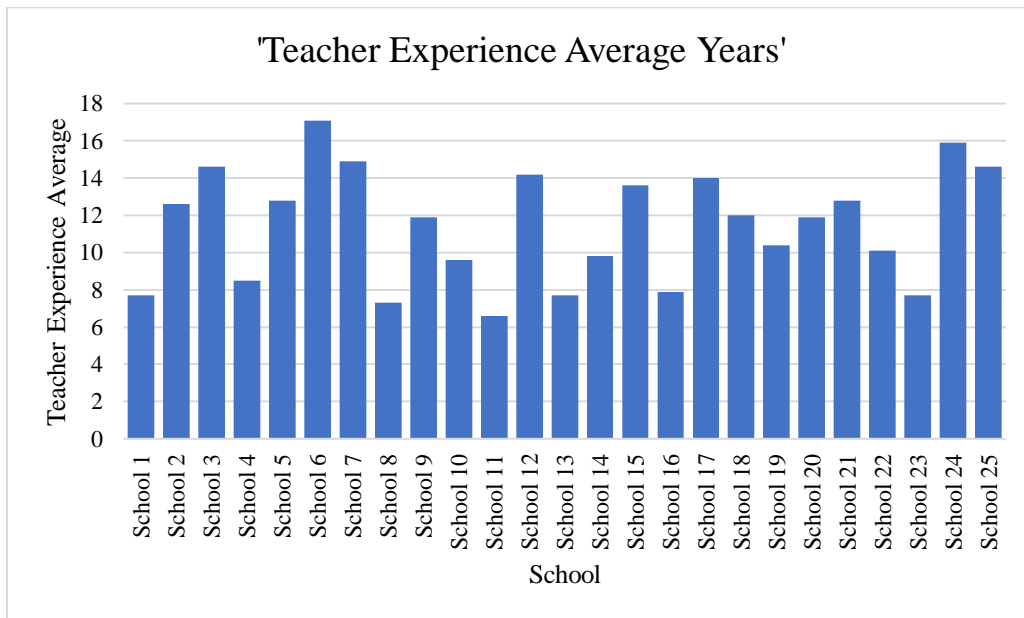
Table 4.4

All 25 elementary schools per-pupil instructional expenditures only

	coefficient of variation	Gini Coefficient	McLoone Index	Theil Index
Instructional Expenditure Per-Pupil	0.11	0.06	0.94	0.01

Note. Calculations were rounded and done through Excel and an online equity calculator.

Table 4.4 detailed the equity assessment calculations for the coefficient of variation, Gini Coefficient, McLoone Index, and Theil Index. The coefficient of variation was calculated by dividing the per-pupil instructional expenditure standard deviation (SD) $498 divided by the per-pupil instructional expenditure mean $4,524. The Gini Coefficient and Theil Index were calculated through an online calculator tool (http://www.poorcity.richcity.org/calculator/) by inputting the student enrollment and per-pupil instructional expenditure at each school site from Table 4.2. The McLoone Index was calculated in Excel by dividing the sum of all the per-pupil instructional expenditures below the per-pupil instructional median by the product of the number of elementary schools below the median level and the value of the median level from Table 4.2.

Table 4.5

Descriptive Statistics for 25 Elementary Schools only

Descriptive Statistics			
	Mean	Std. Deviation	N
Instructional Expenditure Per-Pupil Amount	4524.28	497.960	25
Number of PTA Memberships	344.04	216.768	25
Parents Attending Parent/Teacher Conference Percentage	82.28	11.785	25
Economically Disadvantaged Percentage	47.836	18.8573	25
Gifted/Talented Percentage	6.876	3.5947	25
Special Education Percentage	17.968	3.0673	25
Teacher Experience Average	11.448	3.0355	25

Table 4.6

SPSS Multiple Regression (R) and Coefficient of Determination (R²) of 25 Schools

Regression Statistics[b]	R	R Squared	Adj. R Squared	Standard Error of Estimate
Per-Pupil Instructional Expenditure	.836[a]	.699	.599	315.383

a. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

b. Dependent Variable: Per-Pupil Instructional Expenditure for 25 Schools

Table 4.7

SPSS Analysis of Variance for 25 Schools

ANOVA[a]

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	4160740.528	6	693456.755	6.972	<.001[b]
Residual	1790400.512	18	99466.695		
Total	5951141.040	24			

a. Dependent Variable: Per-Pupil Instructional Expenditure for 25 Schools

b. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

Table 4.8

SPSS Coefficients for 25 Schools

Coefficients Per-pupil Instructional Expenditure[a]

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model 1	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	2805.550	971.898		2.887	.010		
Number of PTA Memberships	-.884	.474	-.385	-1.865	.079	.393	2.546
Parents Attending Parent/Teacher Conference %	-10.861	6.691	-.257	-1.623	.122	.667	1.500
Economically Disadvantaged %	12.650	8.590	.479	1.473	.158	.158	6.332
Gifted/Talented %	78.491	37.395	.567	2.099	.050	.229	4.360
Special Education %	58.448	27.998	.360	2.088	.051	.562	1.779
Teacher Experience Average	63.005	26.933	.384	2.339	.031	.620	1.613

a. Dependent Variable: Per-pupil Instructional Expenditure for 25 Schools

Table 4.9

SPSS Residuals Statistics for 25 Elementary Schools

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3608.20	5319.77	4524.28	416.370	25
Residual	-489.319	568.068	.000	273.130	25
Std. Predicted Value	-2.200	1.911	.000	1.000	25
Std. Residual	-1.552	1.801	.000	.866	25

a. Dependent Variable: Per-Pupil Instructional Expenditure for 25 Schools

Figure 4.17

SPSS Tests the norms of the residuals in the regression analysis for 25 Schools

Normal P–P Plot of Regression Standardized Residual
Dependent Variable: Instructional Expenditure Per–Pupil Amount
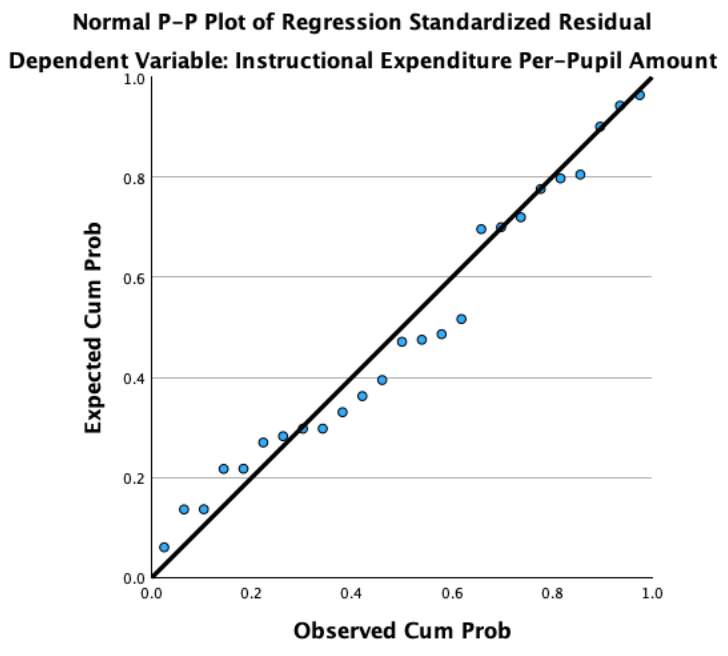
Figure 4.18

SPSS Tests the norms of the residuals in the regression analysis for 25 Schools
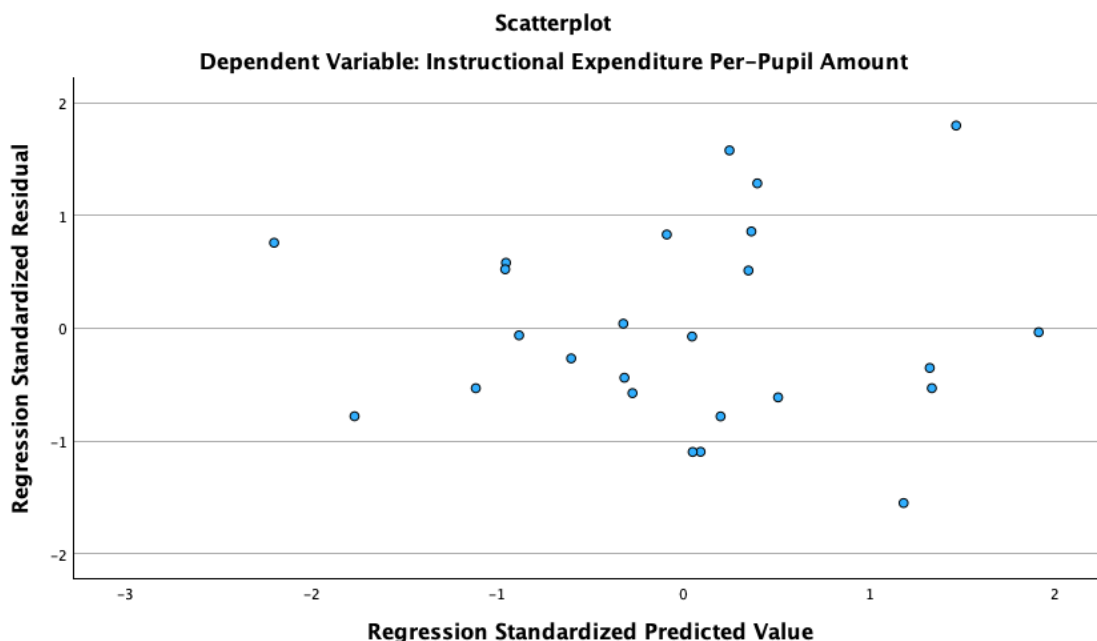
The multiple regression analysis was used to illustrate the prediction in the relationship between the per-pupil instructional expenditure for 25 elementary schools and the independent or predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). Table 4.5 provided descriptive statistics for the per-pupil instructional expenditure data of all twenty-five elementary schools. The assumption from the model was a linear relationship existed between the per-pupil instructional expenditure and the independent variables. The Table 4.6 detailed a correlation R value of .836 which resulted in a positive correlation between the dependent variable and the predictor variables. The R squared or coefficient of determination .699 in Table 4.6 displayed the coefficient of determination which attributed the variation in the dependent variable to the independent/predictor variables. The adjusted R squared of .599 result in Table 4.6 illustrated the

adjustment made to the correlation due to an increase in the number of independent variables. The adjusted R squared meant sixty percent of the variance in the per-pupil instructional expenditure was attributed to the independent variables. The SPSS calculated the SEE in Table 4.6 as 315.38 which determined the accuracy in the prediction of the model to the actual data. The high SEE may denote not a good fit for the regression model, and it may not accurately predict the dependent variable.

The ANOVA Model in Table 4.7 displayed the results from the multiple linear regression. The Sum of Squares in the table was affiliated with the variance in the model. The df in Table 4.7 was associated with the different sources of the variances in the model. There were six predictor variables which accounted for the df results in Table 4.7. The Mean Square in Table 4.7 computed the F ratio which was used to test the significance of the predictors in the model. The F-value of 6.972 determined whether the independent variables can reliably predict the dependent variables. The Sig. in Table 4.7 resulted in a p-value of .001 which was lower than the statistically significant effect. Since the p-value is less than .05, the independent variables can reliably predict the dependent variable.

The coefficient table in Table 4.8 of the regression model detailed the predictor variables. The t-value and Sig. in Table 4.8 conveyed whether the coefficients in the model were statistically significant. Only statistically significant relationships have p-values of .05 or less in Table 4.8 which three predictor variables have an effect: gifted/talented percentage (.05), special education percentage (.05), and years of teacher experience (.03). Number of PTA memberships (.08), parents attending parent/teacher conferences (.12), and percentage of economically disadvantaged (.16) do not have a statistically significant effect on per-pupil instructional expenditure. The B statistic dictated for every one unit of change in the independent variables the

per-pupil instructional expenditure is affected. The independent variables that were significant indicated for every percentage in gifted/talented students the per-pupil instructional expenditure increased by $78.49. Every percentage increase in special education students the per-pupil instructional expenditure increased by $58.45. Finally, every year of teacher experience equated to $63 in per-pupil instructional expenditure. In Table 4.8, the Beta results were standardized coefficients which placed all the variables on the same scale to determine which had the greatest effect. The statistically significant variables signified one unit of standard deviation accounts for the standard deviation in per-pupil instructional expenditure. The Collinearity Statistics of Tolerance and VIF in Table 4.8 determined whether the regression model is valid by indicating how much correlation exists between the predictor variables. All the Tolerance values were over the value .1 and less than 10, so there was no collinearity issue between the relationship of the variables. The regression results were valid. The Residuals Statistics Table 4.9 was the error between predictive value and observed value of the data. Figure 4.17 was the normality for the standardized residuals which followed the line to indicate an assumption of normal distribution in per-pupil instructional expenditure. The scatterplot in Figure 4.18 resulted in the randomization of plots between -3 and 2 on the X-axis and between 2 and -2 on the Y-axis. This meant the predictive variables meet the assumptions that they were independent, and there was a constant variance from one another.

15 Elementary Schools Instructional Expenditure

Table 4.10

15 elementary schools for the 2018-2019 school year (OEQA, 2019; OCAS, 2019)

School	Enrollment Number as of October 1st	Instructional Expenditure Total Budget Amount (USD dollars rounded)	Instructional Expenditure Per-Pupil Amount (USD dollars rounded)	Number of PTA Memberships	PTA Revenue (USD dollars rounded)	PTA Per-Pupil Amount (USD dollars rounded)
School 1	562	2,450,939	4361	117	22,757	40
School 3	697	3,004,732	4311	759	124,315	178
School 4	650	2,688,940	4137	538	76,664	118
School 5	726	3,298,514	4543	189	61,182	84
School 6	614	2,703,678	4403	768	103,814	169
School 8	706	3,029,103	4291	208	31,605	45
School 11	539	2,560,494	4750	177	33,979	63
School 13	497	2,095,888	4217	142	47,753	96
School 15	560	2,351,400	4199	482	92,864	166
School 16	466	2,374,520	5096	159	54,042	116
School 17	455	2,595,042	5703	200	99,961	220
School 20	465	1,947,999	4189	144	31,285	67
School 21	685	2,635,994	3848	644	106,486	155
School 23	598	2118348	3542	599	116,486	195
School 24	588	2,658,560	4521	519	79,450	135
Totals	8808	38,514,151	66111	5645	1,082,643	1847
Mean	587.2	2567610.07	4407.4	376.333333	72176.2	123.133333
Median	588	2595042	4311	208	76664	118
SD	92.0839679	367537.889	506.301265	244.416701	34224.6408	56.5582717

Figure 4.19

Per-Pupil Instructional Expenditure for 15 elementary schools
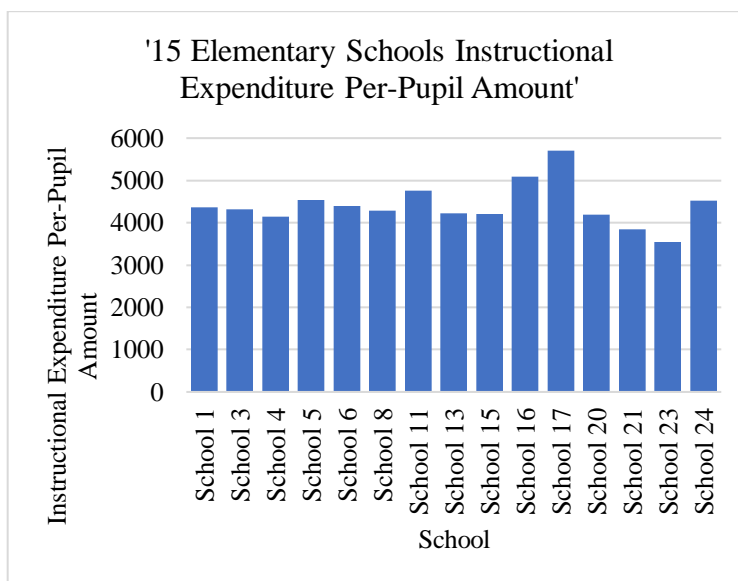
Table 4.11

A subsample of 15 elementary schools per-pupil instructional expenditures only

	coefficient of variation	Gini Coefficient	McLoone Index	Theil Index
Instructional Expenditure Per-Pupil	0.11	0.05	0.82	0.01

Note. Calculations were rounded and done through Excel and an online equity calculator.

Table 4.11 detailed the equity assessment calculations for the coefficient of variation, Gini Coefficient, McLoone Index, and Theil Index. The coefficient of variation was calculated by dividing the per-pupil instructional expenditure standard deviation (SD) $506 (rounded) divided by the per-pupil instructional expenditure mean $4407 (rounded) from Table 4.29. The Gini Coefficient and Theil Index were calculated through an online calculator tool

(http://www.poorcity.richcity.org/calculator/) by inputting the student enrollment and per-pupil instructional expenditure at each school site from Table 4.10. The McLoone Index was calculated in Excel by dividing the sum of all the per-pupil instructional expenditures below the per-pupil instructional expenditure median by the product of the number of elementary schools below the median level and the value of the median level from Table 4.10.

Table 4.12

Descriptive statistics for 15 elementary schools

Descriptive Statistics

	Mean	Std. Deviation	N
Instructional Expenditure Per-Pupil Amount	4407.40	506.301	15
Number of PTA Memberships	376.33	244.417	15
Parents Attending Parent/Teacher Conference Percentage	81.60	12.076	15
Economically Disadvantaged Percentage	45.247	19.4716	15
Gifted/Talented Percentage	6.767	3.6672	15
Special Education Percentage	17.060	2.7200	15
Teacher Experience Average	11.073	3.5730	15

Table 4.13

SPSS Multiple Regression (R) and Coefficient of Determination (R^2) for 15 schools

Regression Statistics[b]

	R	R Squared	Adj. R Squared	Standard Error of Estimate
15 Elementary Schools Instructional Expenditure	.857[a]	.734	.534	345.637

a. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

b. Dependent Variable: Per-Pupil Instructional Expenditure Amount for 15 Schools

Table 4.14

SPSS Multiple Regression ANOVA for 15 Schools

ANOVA[a]

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	2633055.317	6	438842.553	3.673	.047[b]
Residual	955718.283	8	119464.785		
Total	3588773.600	14			

a. Dependent Variable: Per-Pupil Instructional Expenditure Amount for 15 Schools

b. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

Table 4.15

SPSS Multiple Regression Coefficients for 15 Schools

Coefficients Per-pupil Instructional Expenditure and Per-pupil PTA Revenue[a]

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model 1	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	29868.766	1489.630		1.981	.083		
Number of PTA Memberships	-.966	.618	-.466	-1.562	.157	.373	2.678
Parents Attending Parent/Teacher Conference %	-16.116	9.676	-.384	-1.666	.134	.625	1.600
Economically Disadvantaged %	16.811	13.500	.647	1.245	.248	.123	8.098
Gifted/Talented %	81.413	53.794	.590	1.513	.169	.219	4.561
Special Education %	44.654	43.446	.240	1.028	.334	.611	1.636
Teacher Experience Average	94.276	39.336	.665	2.397	.043	.432	2.315

a.   Dependent Variable: Per-pupil Instructional Expenditure for 15 Schools

Table 4.16

SPSS Multiple Regression Residuals Statistics for 15 schools

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3500.46	5260.08	4407.40	433.677	15
Std. Predicted Value	-2.091	1.966	.000	1.000	15
Standard Error of Predicted Value	157.533	290.158	231.899	45.981	15
Adjusted Predicted Value	2859.35	4966.28	4393.89	539.729	15
Residual	-328.455	442.916	.000	261.277	15
Std. Residual	-.950	1.281	.000	.756	15
Stud. Residual	-1.131	1.899	.017	1.053	15
Deleted Residual	-558.198	988.646	13.513	529.808	15
Stud. Deleted Residual	-1.155	2.397	.079	1.157	15
Mahal. Distance	1.975	8.933	5.600	2.397	15
Cook's Distance	.001	.758	.166	.221	15
Centered Leverage Value	.141	.638	.400	.171	15

a. Dependent Variable: Per-Pupil Instructional Expenditure Amount for 15 Schools

Figure 4.20

SPSS Regression Standardized Residual for 15 schools

Histogram
Dependent Variable: Instructional Expenditure Per–Pupil Amount
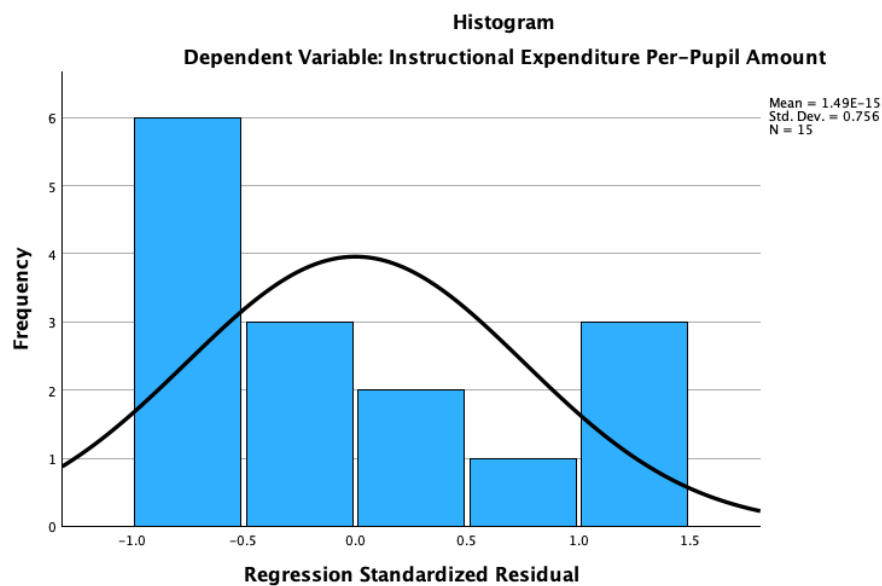
Figure 4.21

SPSS Regression Standardized Residual for 15 schools
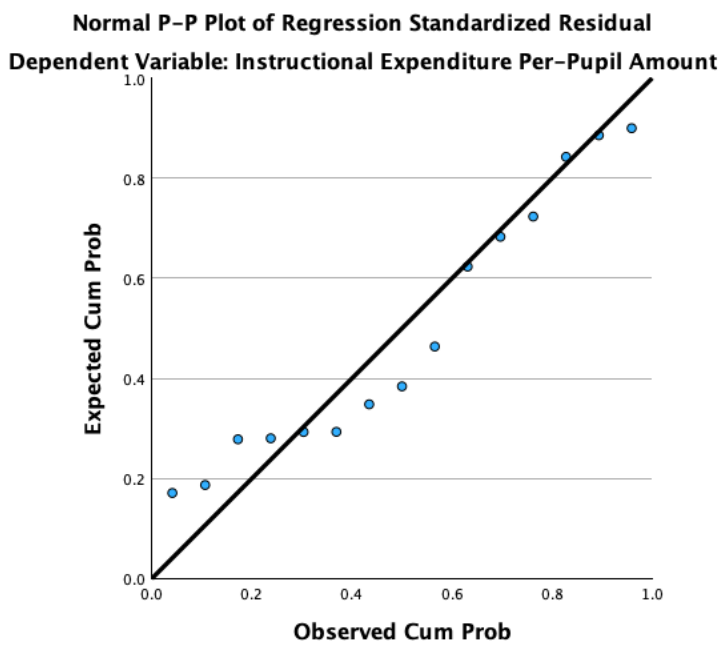
Figure 4.22

SPSS Regression Standardized Residual for 15 schools
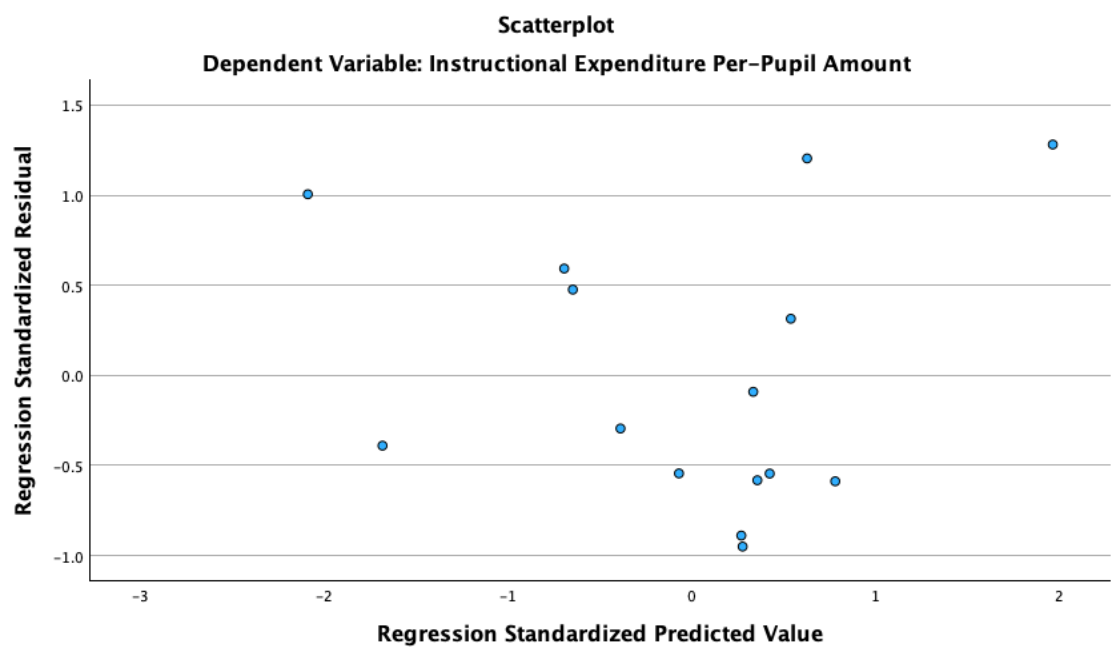
The multiple regression analysis was used to illustrate the prediction in the relationship between the per-pupil instructional expenditure for 15 elementary schools and the independent or predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). Table 4.12 provided descriptive statistics for the per-pupil instructional expenditure data of the fifteen elementary schools. The assumption from the model was a linear relationship existed between the per-pupil instructional expenditure of the 15 elementary schools and the independent variables. The Table 4.13 detailed a correlation R value of .857 which resulted a positive correlation between the dependent variable and the predictor variables. The R squared or coefficient of determination .734 in Table 4.13 displayed the coefficient of determination which attributed the variation in the dependent variable to the independent/predictor variables. The adjusted R squared of .534 result in Table 4.13 was used to illustrate the adjustment made to the correlation due to an increase in the number of independent variables. The adjusted R squared means fifty-three percent of the variance in the per-pupil instructional expenditure is attributed to the independent variables. The SPSS calculated the SEE in Table 4.13 as 345.637 which determined the accuracy in the prediction of the model to the actual data. The high SEE may denote not a good fit for the regression model, and it may not accurately predict the dependent variable.

The ANOVA Model in Table 4.14 was the results from the multiple linear regression. The Sum of Squares in the table was affiliated with the variance in the model. The df in Table 4.14 was associated with the different sources of the variances in the model. There were six predictor variables which accounts for the df results in Table 4.14. The Mean Square in Table 4.14 computed the F ratio which was used to test the significance of the predictors in the model.

The F-value of 3.673 determined whether the independent variables can reliably predict the dependent variables. The Sig. in Table 4.14 resulted in a p-value of .047 which is lower than the statistically significant effect. Since the p-value is less than .05, the independent variables can reliably predict the dependent variable.

The coefficient table in Table 4.15 of the regression model detailed the predictor variables. The t-value and Sig. in Table 4.15 conveyed whether the coefficients in the model were statistically significant. Only statistically significant relationships have p-values of .05 or less in Table 4.15 which one predictor variables had an effect: years of teacher experience (.04). Number of PTA memberships (.16), parents attending parent/teacher conferences (.13), percentage of economically disadvantaged (.25), gifted/talented student percentage (.17), and special education student percentage (.33) do not have a statistically significant effect on per-pupil instructional expenditure. The B statistic dictated for every one unit of change in the independent variables the per-pupil instructional expenditure is affected. The independent variables that were significant indicated for every year of teacher experience equates to $94 in per-pupil instructional expenditure. In Table 4.15, the Beta results were standardized coefficients which placed all the variables on the same scale to determine which had the greatest effect. The statistically significant variables resulted in one unit of standard deviation accounts for the standard deviation in per-pupil instructional expenditure. The Collinearity Statistics of Tolerance and VIF in Table 4.15 determined whether the regression model is valid by indicating how much correlation exists between the predictor variables. All the Tolerance values were over the value .1 and less than 10, so there was no collinearity issue between the relationship of the variables. The regression results were valid. The Residuals Statistics Table 4.16 resulted the error between predictive value and observed value of the data. Figure 4.20 was a histogram displaying a normal

curve with some outliers. Figure 4.21 were the normality for the standardized residuals which followed the line to indicate an assumption of normal distribution in per-pupil instructional expenditure. The scatterplot in Figure 4.22 was the randomization of plots between -3 and 2 on the X-axis and between 1.5 and -1 on the Y-axis. This meant the predictive variables met the assumptions that they were independent, and there was a constant variance from one another.

Research Question 2:

What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

15 Elementary Schools PTA Revenue

Figure 4.23

PTA Memberships Compared with Per-Pupil PTA Revenue
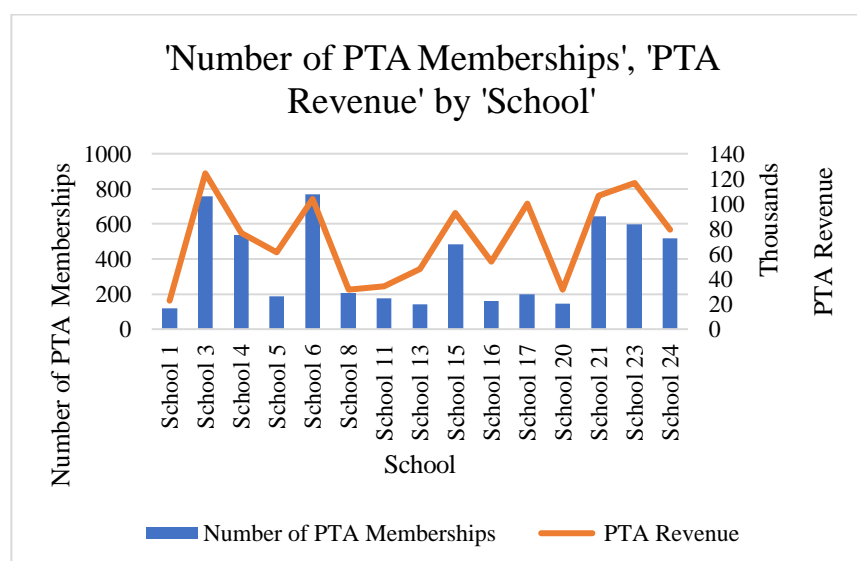
Note. A pattern between the number of PTA Memberships and PTA revenue.

Figure 4.24

15 elementary schools per-pupil PTA revenue only
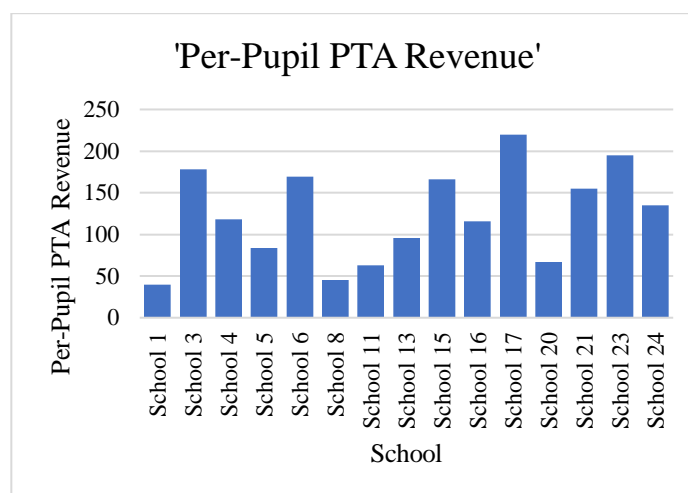
Table 4.17

15 elementary schools per-pupil PTA revenue only

	coefficient of variation	Gini Coefficient	McLoone Index	Theil Index
PTA Per-Pupil Amount	0.46	0.25	0.62	0.11

Note. Calculations were rounded and done through Excel and an online equity calculator.

Table 4.17 detailed the equity assessment calculations for the coefficient of variation, Gini Coefficient, McLoone Index, and Theil Index. The coefficient of variation was calculated by dividing the per-pupil PTA revenue SD $57 (rounded) divided by the per-pupil PTA revenue mean $123 (rounded) from Table 4.29. The Gini Coefficient and Theil Index were calculated through an online calculator tool (http://www.poorcity.richcity.org/calculator/) by inputting the student enrollment and per-pupil PTA revenue at each school site from Table 4.10. The

McLoone Index was calculated in Excel by dividing the sum of all the per-pupil PTA revenue below the per-pupil PTA revenue median by the product of the number of elementary schools below the median level and the value of the median level from Table 4.10.

Table 4.18

SPSS Descriptive Statistics for 15 Elementary Schools

Descriptive Statistics

	Mean	Std. Deviation	N
PTA Per-Pupil Amount	123.13	56.558	15
Number of PTA Memberships	376.33	244.417	15
Parents Attending Parent/Teacher Conference Percentage	81.60	12.076	15
Economically Disadvantaged Percentage	45.247	19.4716	15
Gifted/Talented Percentage	6.767	3.6672	15
Special Education Percentage	17.060	2.7200	15
Teacher Experience Average Years	11.073	3.5730	15

Table 4.19

SPSS Multiple Regression (R) and Coefficient of Determination (R^2) for 15 schools

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.872[a]	.760	.580	36.639	.760	4.227	6	8	.032

a. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

b. Dependent Variable: Per-Pupil PTA Revenue 15 Elementary Schools

Table 4.20

SPSS ANOVA for 15 Elementary Schools

ANOVA[a]

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	34044.178	6	5674.030	4.227	.032[b]
Residual	10739.555	8	1342.444		
Total	44783.733	14			

a. Dependent Variable: Per-Pupil PTA Revenue 15 Elementary Schools

b. Predictors: (Constant), Teacher Experience Average, Special Education Percentage,

Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage,

Number of PTA Memberships, Economically Disadvantaged Percentage

Table 4.21

SPSS Coefficients for 15 Elementary Schools

Coefficients Per-pupil PTA Revenue[a]

Model 1	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	40.204	158.863		.253	.807		
Number of PTA Memberships	.085	.066	.366	1.292	.232	.373	2.678
Parents Attending Parent/Teacher Conference %	-.955	1.026	-.204	-.931	.379	.625	1.600
Economically Disadvantaged %	.221	1.431	.076	.155	.881	.123	8.098
Gifted/Talented %	11.656	5.702	.756	2.044	.075	.219	4.561
Special Education %	1.917	4.605	.092	.416	.688	.611	1.636
Teacher Experience Average	.665	4.170	.042	.159	.877	.432	2.315

a. Dependent Variable: Per-Pupil PTA Revenue 15 Elementary Schools

Table 4.22

SPSS Residuals Statistics for 15 Elementary Schools

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	55.95	189.77	123.13	49.313	15
Std. Predicted Value	-1.362	1.351	.000	1.000	15
Standard Error of Predicted Value	16.699	30.758	24.583	4.874	15
Adjusted Predicted Value	52.67	203.62	116.95	50.035	15
Residual	-58.460	50.767	.000	27.697	15
Std. Residual	-1.596	1.386	.000	.756	15
Stud. Residual	-1.852	2.053	.062	.988	15
Deleted Residual	-78.736	111.503	6.182	48.942	15
Stud. Deleted Residual	-2.291	2.793	.075	1.166	15
Mahal. Distance	1.975	8.933	5.600	2.397	15
Cook's Distance	.001	.721	.111	.181	15
Centered Leverage Value	.141	.638	.400	.171	15

a. Dependent Variable: Per-Pupil PTA Revenue 15 Elementary Schools

Figure 4.25

SPSS Residuals Statistics for 15 Elementary Schools
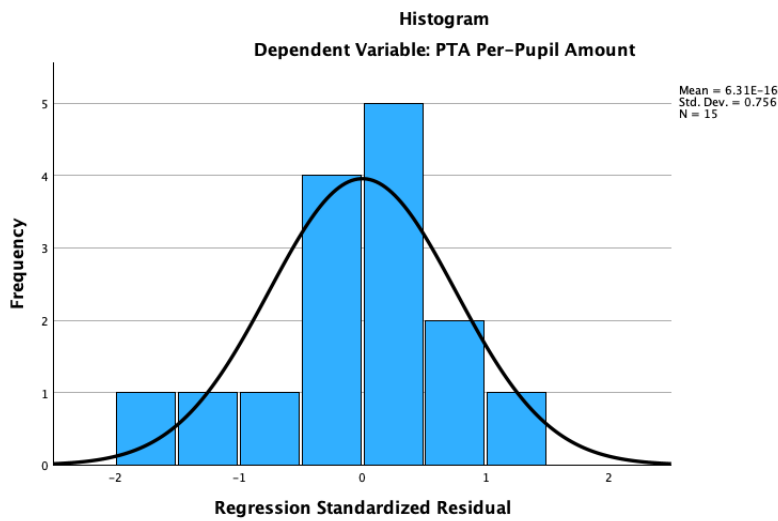
Figure 4.26

SPSS Residuals Statistics for 15 Elementary Schools

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PTA Per-Pupil Amount
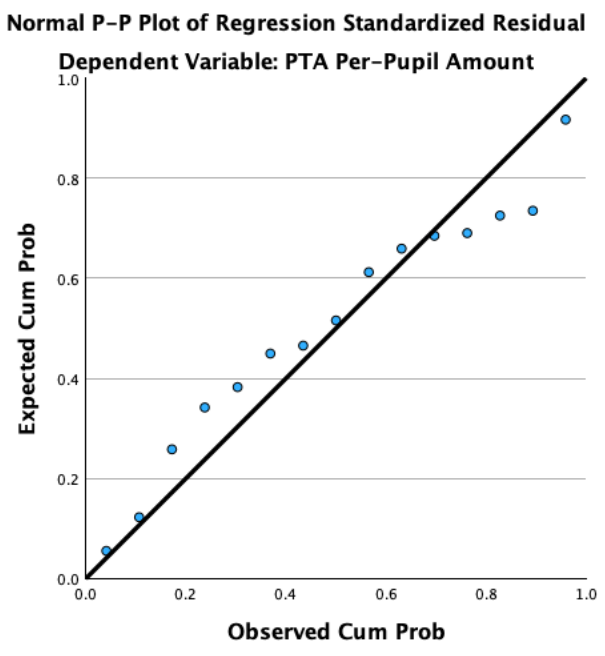
Figure 4.27

SPSS Residuals Statistics for 15 Elementary Schools
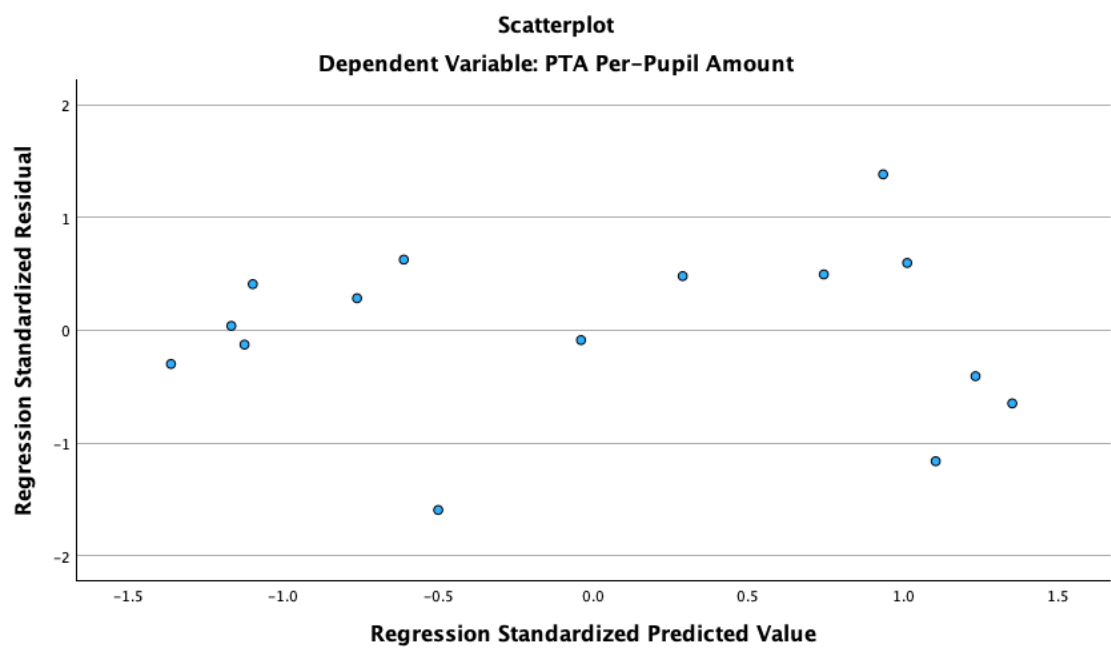
Scatterplot
Dependent Variable: PTA Per-Pupil Amount

The multiple regression analysis was used to illustrate the prediction in the relationship between the per-pupil PTA revenue for 15 elementary schools and the independent or predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). Table 4.18 provided descriptive statistics for the per-pupil PTA revenue data of the fifteen elementary schools. The assumption from the model was a linear relationship existed between the per-pupil PTA revenue and the independent variables. The Table 4.19 detailed a correlation R value of .872 which was a positive correlation between the dependent variable and the predictor variables. The R squared or coefficient of determination .760 in Table 4.19 displayed the coefficient of determination which attributed the variation in the dependent variable to the independent/predictor variables. The adjusted R square of .580 result in Table 4.19 was used to illustrate the adjustment made to the correlation due to an increase in the number of independent variables. The adjusted R squared meant fifty-eight percent of the variance in the per-pupil instructional expenditure was attributed to the independent variables. The SPSS calculated the SEE in Table 4.19 as 36.639 which determined the accuracy in the prediction of the model to the actual data. The high SEE may denote not a good fit for the regression model, and it may not accurately predict the dependent variable.

The ANOVA Model in Table 4.20 was the results from the multiple linear regression. The Sum of Squares in the table was affiliated with the variance in the model. The df in Table 4.20 was associated with the different sources of the variances in the model. There were six predictor variables which accounted for the df results in Table 4.20. The Mean Square in Table 4.20 computed the F ratio which tested the significance of the predictors in the model. The F-

value of 4.227 determined whether the independent variables could reliably predict the dependent variables. The Sig. in Table 4.20 resulted a p-value of .03 which is lower than the statistically significant effect. Since the p-value is less than .05, the independent variables can reliably predict the per-pupil PTA revenue.

The coefficient table in Table 4.21 of the regression model detailed the predictor variables. The t-value and Sig. in Table 4.21 conveyed whether the coefficients in the model were statistically significant. Only statistically significant relationships have p-values of .05 or less in Table 4.21 one predictor variable had an effect: years of teacher experience (.04). Number of PTA memberships (.23), parents attending parent/teacher conferences (.38), percentage of economically disadvantaged (.88), gifted/talented student percentage (.08), and special education student percentage (.69) do not have a statistically significant effect on per-pupil instructional expenditure. The B statistic dictated for every one unit of change in the independent variables the per-pupil PTA revenue is affected. The independent variable was significant and indicated for every year of teacher experience equates to 67 cents in per-pupil PTA revenue. In Table 4.21, the Beta results were standardized coefficients which placed all the variables on the same scale to determine which had the greatest effect. The statistically significant variables explained one unit of standard deviation accounts for the standard deviation in per-pupil PTA revenue. The Collinearity Statistics of Tolerance and VIF in Table 4.21 determined whether the regression model was valid by indicating how much correlation existed between the predictor variables. All the Tolerance values were over the value .1 and less than 10, so there was no collinearity issue between the relationship of the variables. The regression results were valid. The Residuals Statistics Table 4.22 were the error between predictive value and observed value of the data. Figure 4.25 illustrated a histogram of normal distribution with a few outliers. Figure 4.26 was the

normality for the standardized residuals which followed the line to indicate an assumption of normal distribution in per-pupil PTA revenue. The scatterplot in Figure 4.27 was the randomization of plots between -1.5 and 1.5 on the X-axis and between 2 and -2 on the Y-axis. This meant the predictive variables meet the assumptions that they were independent, and there was a constant variance from one another.

Table 4.23

Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

School	Enrollment Number as of October 1st	Per-Pupil Instructional Expenditure (USD dollars rounded)	Per-Pupil PTA Revenue (USD dollars rounded)	Combined (USD dollars rounded)
School 1	562	4361	40	4401
School 3	697	4311	178	4489
School 4	650	4137	118	4255
School 5	726	4543	84	4627
School 6	614	4403	169	4572
School 8	706	4291	45	4336
School 11	539	4750	63	4813
School 13	497	4217	96	4313
School 15	560	4199	166	4365
School 16	466	5096	116	5212
School 17	455	5703	220	5923
School 20	465	4189	67	4256
School 21	685	3848	155	4003
School 23	598	3542	195	3737
School 24	588	4521	135	4656
Totals	8808	66111	1847	67958
Mean	587.2	4407.4	123.133333	4530.533
Median	588	4311	118	4401
SD	92.0839679	506.301265	56.5582717	514.105

15 Elementary Schools Instructional Expenditure and PTA Revenue

Figure 4.28

Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue
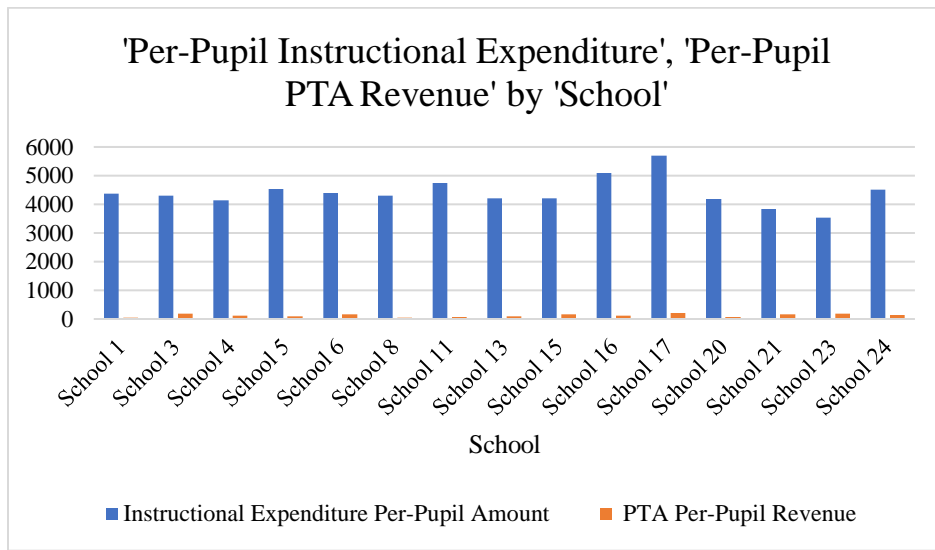
Figure 4.29

Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

Table 4.24

15 schools per-pupil instructional expenditure combined with per-pupil PTA revenue

	coefficient of variation	Gini Coefficient	McLoone Index	Theil Index
Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue	0.12	0.05	0.83	0.01

Note. Calculations were rounded and done through Excel and an online equity calculator.

Table 4.24 detailed the equity assessment calculations for the coefficient of variation, Gini Coefficient, McLoone Index, and Theil Index. The coefficient of variation was calculated by dividing the per-pupil instructional expenditure combined with the per-pupil PTA revenue SD $ divided by the per-pupil instructional expenditure combined with per-pupil PTA revenue mean $. The Gini Coefficient and Theil Index were calculated through an online calculator tool (http://www.poorcity.richcity.org/calculator/) by inputting the student enrollment and per-pupil instructional expenditure and per-pupil PTA revenue at each school site from Table 4.23. The McLoone Index was calculated in Excel by dividing the sum of all th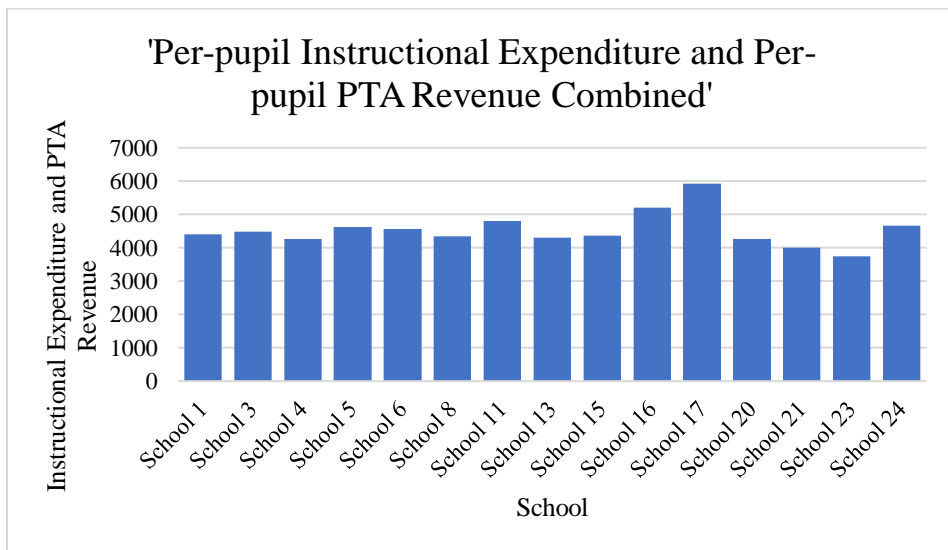e per-pupil instructional expenditures and per-pupil PTA revenue below the per-pupil instructional expenditure and per-pupil PTA revenue median by the product of the number of elementary schools below the median level and the value of the median level from Table 4.23.

Table 4.25

SPSS Descriptive Statistics for 15 Elementary Schools

Descriptive Statistics

	Mean	Std. Deviation	N
Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue	4530.53	514.105	15
Number of PTA Memberships	376.33	244.417	15
Parents Attending Parent/Teacher Conference Percentage	81.60	12.076	15
Economically Disadvantaged Percentage	45.247	19.4716	15
Gifted/Talented Percentage	6.767	3.6672	15
Special Education Percentage	17.060	2.7200	15
Teacher Experience Average	11.073	3.5730	15

Table 4.26

SPSS Multiple Regression Model for 15 Elementary Schools

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.842[a]	.710	.492	366.539	.710	3.257	6	8	.063

a. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

b. Dependent Variable: Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

Table 4.27

SPSS ANOVA for 15 Elementary Schools

ANOVAª

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	2625449.683	6	437574.947	3.257	.063[b]
Residual	1074808.051	8	134351.006		
Total	3700257.733	14			

a. Dependent Variable: Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

b. Predictors: (Constant), Teacher Experience Average, Special Education Percentage, Parents Attending Parent/Teacher Conference Percentage, Gifted/Talented Percentage, Number of PTA Memberships, Economically Disadvantaged Percentage

Table 4.28

SPSS Coefficients for 15 Elementary Schools

Coefficients Per-pupil Instructional Expenditure and Per-pupil PTA Revenue[a]

Model 1	Unstandardized Coefficients B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	3008.969	1589.260		1.893	.095		
Number of PTA Memberships	-.881	.656	-.419	-1.344	.216	.373	2.678
Parents Attending Parent/Teacher Conference %	-17.071	10.261	-.401	-1.664	.135	.625	1.600
Economically Disadvantaged %	17.032	14.317	.645	1.190	.268	.123	8.098
Gifted/Talented %	93.069	57.047	.664	1.631	.141	.219	4.561
Special Education %	46.572	46.073	.246	1.011	.342	.611	1.636
Teacher Experience Average Years	94.941	41.715	.660	2.276	.052	.432	2.315

a. Dependent Variable: Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

Table 4.29

SPSS Residuals Statistics for 15 Elementary Schools

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3637.80	5429.32	4530.53	433.050	15
Std. Predicted Value	-2.061	2.075	.000	1.000	15
Standard Error of Predicted Value	167.060	307.706	245.923	48.761	15
Adjusted Predicted Value	2964.14	5043.58	4510.84	544.045	15
Residual	-352.228	493.684	.000	277.078	15
Std. Residual	-.961	1.347	.000	.756	15
Stud. Residual	-1.144	1.996	.022	1.050	15
Deleted Residual	-553.886	1084.307	19.695	558.302	15
Stud. Deleted Residual	-1.170	2.635	.094	1.176	15
Mahal. Distance	1.975	8.933	5.600	2.397	15
Cook's Distance	.002	.744	.163	.230	15
Centered Leverage Value	.141	.638	.400	.171	15

a. Dependent Variable: Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

Figure 4.30

SPSS Residuals Statistics for 15 Elementary Schools

Histogram
Dependent Variable: Instructional Expenditure and PTA Revenue

Mean = −7.70E−16
Std. Dev. = 0.756
N = 15

Figure 4.31

SPSS Residuals Statistics for 15 Elementary Schools

Normal P-P Plot of Regression Standardized Residual
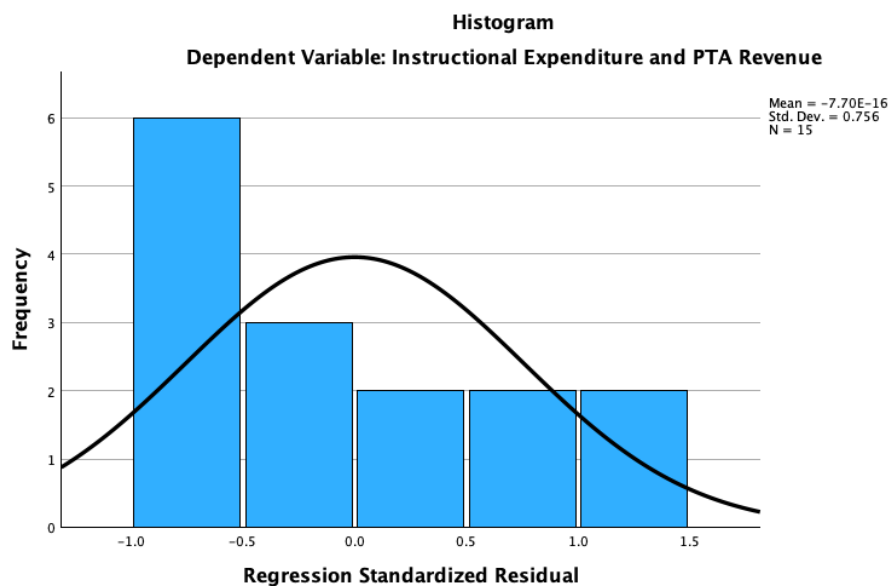Dependent Variable: Instructional Expenditure and PTA Revenue

Figure 4.32
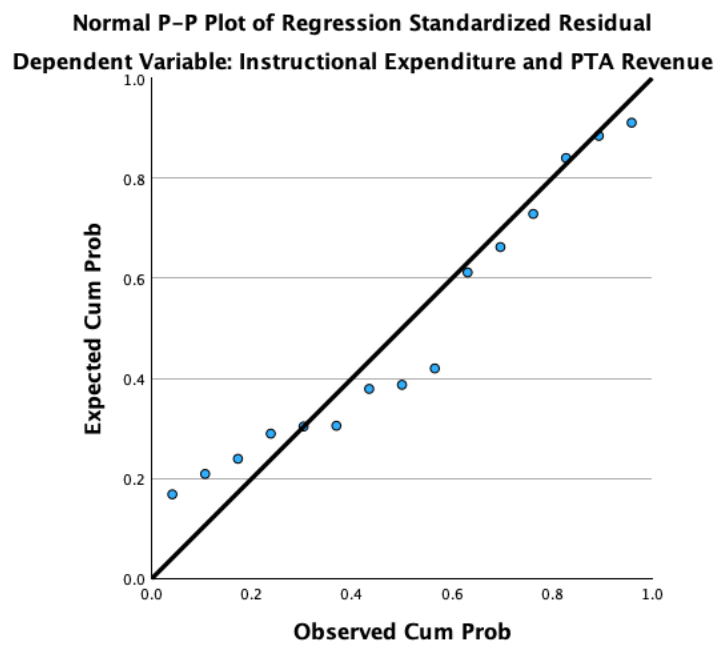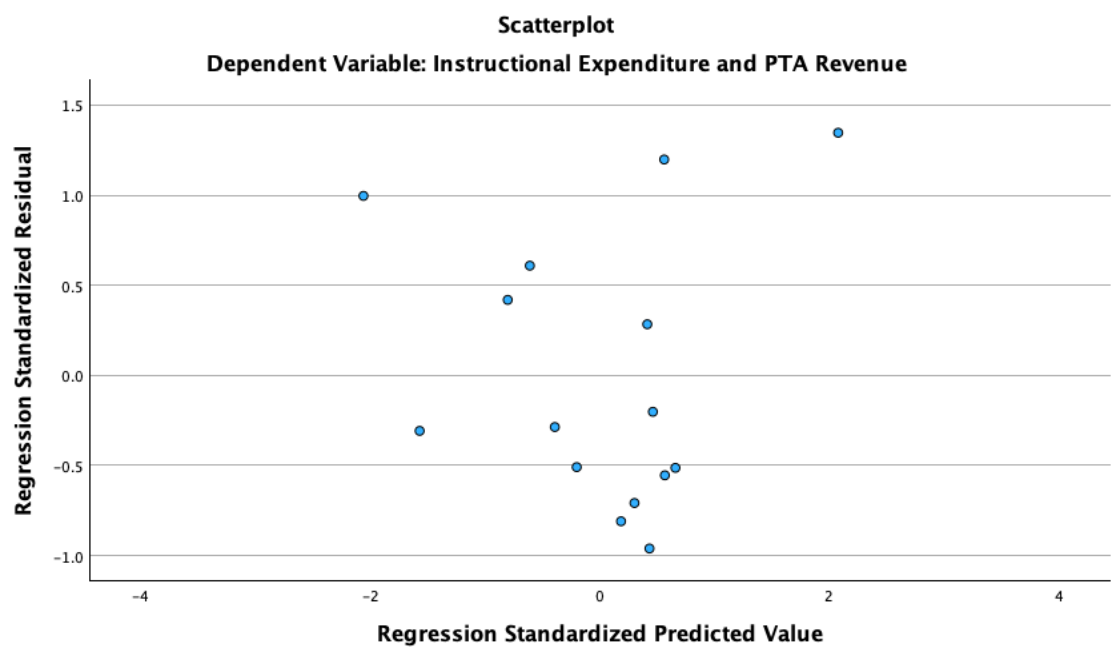
SPSS Residuals Statistics for 15 Elementary Schools

Scatterplot
Dependent Variable: Instructional Expenditure and PTA Revenue

The multiple regression analysis was used to illustrate the prediction in the relationship between the per-pupil instructional expenditure with per-pupil PTA revenue and the independent or predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). Table 4.25 provided descriptive statistics for the per-pupil instructional expenditure with per-pupil PTA revenue data of the fifteen elementary schools. The assumption from the model was a linear relationship existed between the per-pupil instructional expenditure with per-pupil PTA revenue and the independent variables. The Table 4.26 detailed a correlation R value of .842 which indicated a positive correlation between the dependent variable and the predictor variables. The R squared or coefficient of determination .710 in Table 4.26 attributed the variation in the dependent variable to the independent/predictor variables. The adjusted R square of .492 result in Table 4.26 illustrated the adjustment made to the correlation due to an increase in the number of independent variables. The adjusted R squared meant forty-nine percent of the variance in the per-pupil instructional expenditure with per-pupil PTA revenue was attributed to the independent variables. The SPSS calculated the SEE in Table 4.26 as 366.539 which determined the accuracy in the prediction of the model to the actual data. The high SEE may denoted not a good fit for the regression model, and it may not accurately predict the dependent variable.

The ANOVA Model in Table 4.27 was the results from the multiple linear regression. The Sum of Squares in the table was affiliated with the variance in the model. The df in Table 4.27 was associated with the different sources of the variances in the model. There were six predictor variables which accounted for the df results in Table 4.27. The Mean Square in Table 4.27 was used to compute the F ratio which was used to test the significance of the predictors in

the model. The F-value of 3.257 was used to determine whether the independent variables can reliably predict the dependent variables. The Sig. in Table 4.27 had a p-value of .06 which was greater than the statistically significant effect. Since the p-value was greater than .05, the independent variables may not reliably predict the dependent variable.

The coefficient table in Table 4.28 of the regression model detailed the predictor variables. The t-value and Sig. in Table 4.28 conveyed whether the coefficients in the model were statistically significant. Only statistically significant relationships have p-values of .05 or less in Table 4.28 which one predictor variable had an effect: years of teacher experience (.05). Number of PTA memberships (.22), parents attending parent/teacher conferences (.14), percentage of economically disadvantaged (.27), gifted/talented percentage (.14), and special education student percentage (.34) do not have a statistically significance effect on per-pupil instructional expenditure. The B statistic dictated for every one unit of change in the independent variables the per-pupil instructional expenditure with per-pupil PTA revenue is affected. The independent variable that was significant indicated for every year of teacher experience equated to $94.94 in per-pupil instructional expenditure with per-pupil PTA revenue. In Table 4.28, the Beta results were standardized coefficients which placed all the variables on the same scale to determine which had the greatest effect. The statistically significant variables indicated one unit of standard deviation accounts for the standard deviation in per-pupil instructional expenditure with per-pupil PTA revenue. The Collinearity Statistics of Tolerance and VIF in Table 4.28 determined whether the regression model was valid by indicating how much correlation existed between the predictor variables. All the Tolerance values were over the value .1 and less than 10, so there was no collinearity issue between the relationship of the variables. The regression results were valid. The Residuals Statistics Table 4.29 were the error between predictive value and

observed value of the data. Figure 4.31 indicated the normality for the standardized residuals which followed the line to indicate an assumption of normal distribution in per-pupil instructional expenditure with per-pupil PTA revenue. The scatterplot in Figure 4.32 resulted in the randomization of plots between -3 and 3 on the X-axis and between 1.5 and -1 on the Y-axis. This meant the predictive variables meet the assumptions that they were independent, and there was a constant variance from one another.

Summary

The purpose of this study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous school district in Oklahoma to determine the effect on the per-pupil spending. Chapter 4 described the data utilized to analyze the relationships between the schools' data. Additional data were used to describe the dynamics present at each of the elementary schools. The tables, figures, and descriptions detailed the equity assessments used in the study to answer the research questions. In Chapter 5, the discussions entailed the findings, conclusions, implications, and recommendations for future research.

Chapter 5

Discussions and Conclusions

The purpose of this study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous suburban school district in Oklahoma to determine the effect on the per-pupil spending. The theoretical framework was based on the concepts of equity, social justice, and critical resource theory. The equity framework recognized some students and schools were disadvantaged and need supplemental resources to achieve the same opportunities present at sister schools. Equity was separated into three parts: horizontal, vertical, and wealth neutrality (Owings and Kaplan, 2010; Verstegen and Driscoll, 2008; Carr et al., 2007). Horizontal equity was the standard amount of revenue received for each student enrolled at the school (Verstegen and Driscoll, 2008). Vertical equity funds accounted for the different dynamics at each school such as special population groups such as English Language Learner (ELL), special education, free/reduced lunch (Verstegen and Driscoll, 2008). The concept of fiscal neutrality was a framework that expressed resources should not align with a geographical dwelling of the students (Carr et al., 2007; Owings and Kaplan, 2010). Studies concluded that additional per-pupil spending had increased student learning (Brown et al., 2017; Ballard and Maiden, 2018).

The social justice framework requested the end or reduction of marginalization between elementary students and schools as a means of standardizing school resources. Standardization could occur through a distributive form of justice towards a marginalized group (Rawls, 1971). The critical resources theory was based on a system that advantaged a dominant group with resources opposed to limiting resources to the disadvantaged group (Kaplan and Owings, 2023).

The concepts together fostered a communal approach within a school district to optimize student learning opportunities for all elementary students. Non-profit organizations such as PTA groups assisted in developing a resource system for all elementary students. Educational leaders have a responsibility to reduce educational gaps (Downey, et al, 2019).

Study Design

Data from elementary schools in an anonymous school district were used in the equity audit (Skrla et al., 2004). The information came from the 2018-2019 school year statistics collected from OCA, OEQA, and the PTAs. The premise of the study centered around the PTA revenue, but the other variables contributed to elaborating on other factors that may influence the financial and resource potential at each elementary school site. The equity assessments used were the coefficient of variation, Gini Coefficient, Theil Index, McLoone Index, coefficient of determination, and the multiple regression (Kelly, 2014; Maiden, 2019; Ravid, 2014). The data analyzed the dependent variables of instructional expenditure and PTA revenue (refer to Table 4.2. The independent variables were (refer to Table 4.3): the number of PTA memberships, parents attending parent/teacher conference percentages, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and average years of teacher experience. A sub-sample of fifteen schools was assessed because some of the elementary schools did not have the PTA information. The data collected were compiled together in Table 5.1 to answer the two research questions.

Table 5.1

Equity Assessments

	coefficient of variation	Gini Coefficient	McLoone Index	Theil Index	coefficient of determination	multiple regression
Instructional Expenditure 25 Schools	0.11	0.06	0.94	0.01	0.599	Gifted/Talented Special Education Teacher Exp.
Instructional Expenditure 15 Schools	0.11	.05	0.82	0.01	0.534	Teacher Exp.
PTA Revenue 15 Schools	0.46	0.25	0.62	0.11	0.580	None were statistically significant
Instructional Expenditure and PTA Revenue 15 Schools	0.12	0.05	0.83	0.01	0.492	None were statistically significant

Note. Calculations were rounded and done through Excel, SPSS, and an online equity calculator.

Research Question 1: What is the difference between per-pupil instructional expenditures at each elementary school?

The question was addressed by examining all twenty-five elementary schools in one part and then examining the sub-sample of fifteen elementary schools in the second part. The dependent variable was the per-pupil instructional expenditure for all twenty-five elementary schools and for fifteen elementary schools within the school district. The independent variables (refer to Table 4.3) included the number of PTA memberships, parents attending parent/teacher conference percentages, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and average years of teacher experience.

Research Question 2: What effect does intra-district PTA group revenue have on per-pupil instructional expenditure at each elementary school?

The dependent variables were the per-pupil data for the fifteen schools' PTA revenue and then the combination of per-pupil instructional expenditure and PTA revenue. The independent variables included the number of PTA memberships, parents attending parent/teacher conference percentages, economically disadvantaged percentages, gifted/talented percentages, special education percentages, and average years of teacher experience.

Research Findings

Research Question 1: Findings Summary

Research question 1 queried if there was a difference between the per-pupil instructional expenditure at each elementary school. The dependent variable for the first question was the per-pupil instructional expenditure. The data were compiled and tabulated for all twenty-five elementary schools using the equity assessments, but also compiled and tabulated for a sub-sample of schools that provided PTA revenue data. This allowed a comparative model to assess the statistical measures per-pupil instructional expenditure at all the elementary schools as well as the sub-sample that provided PTA revenue information.

Twenty-five Elementary Schools Per-Pupil Instructional Expenditure

The equity assessments in Table 5.1 included the equity assessment calculations for the per-pupil instructional expenditure for all the twenty-five elementary schools. The results determined if "no inequity" or "high inequity" existed between the elementary schools' per-pupil instructional expenditure in the anonymous school district. The coefficient of variation was .11 on a 0 (no inequity) to 1 (high levels of inequity) scale which indicated low levels of inequity among the elementary schools in terms of per-pupil instructional expenditure. The elementary

schools were spending almost the same amount of revenue on per-pupil instructional expenditure. The Gini Coefficient for all twenty-five elementary schools had a low result of 0.06 on a 0 (no inequity) to 1 (high inequity) scale which relayed almost a perfect equality between per-pupil instructional expenditure at each school site. The McLoone Index was .94 which resulted almost a perfect equity of 1.0 in the ratio needed to raise schools to the median level of distribution in per-pupil instructional expenditure. The Theil Index was .01 on a 0 (perfect equity) to 1 (high inequity) scale which indicates almost a perfect equity between all the elementary schools.

The coefficient of determination (refer to Table 4.6) included the level of variability using the per-pupil instructional expenditure at all twenty-five schools as the dependent variable in relation to the predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). The coefficient of determination or adjusted R squared was .599 on a scale ranging from 0 (no inequity) to 1 (high levels of inequity) in the SPSS tabulation. The statistics indicated that the per-pupil instructional expenditure was influenced by the independent variables producing a moderate level of inequity within all twenty-five elementary schools.

The multiple regression model allowed for a separation between the independent variables to determine the individual effect on the per-pupil instructional expenditure. The ANOVA (refer to Table 4.7) included the predictor variables had a statistically significant effect on the instructional expenditure in the twenty-five schools with a Sig. calculation of less than .001. The coefficient table (refer to Table 4.8) calculated each predictor variable independently by detailing which coefficient is statistically significant. The results indicated gifted/talented

percentages, special education percentages, and teacher experience were the predictor variables statistically significant affecting the per-pupil instructional expenditure. The residuals statistics (refer to Table 4.9, Figure 4.17, and Figure 4.18) validated the normality requirement for variance was met for the data in the model, so the results were statistical significant.

Fifteen Elementary Schools Per-Pupil Instructional Expenditure

The equity assessments in Table 5.1 included the equity results for the per-pupil instructional expenditure for the fifteen elementary schools. The calculations determine if "no inequity" or "high inequity" exists between the elementary schools' per-pupil instructional expenditure in the anonymous school district. The coefficient of variation had a low result of .11 on a 0 (no inequity) to 1 (high levels of inequity) scale which indicated low levels of inequity among the elementary schools in terms of per-pupil instructional expenditure. The elementary schools were spending almost the same amount of revenue on per-pupil instructional expenditure. The Gini Coefficient for the fifteen elementary schools had a low result of 0.05 on a 0 (no inequity) to 1 (high inequity) scale which relayed almost a perfect equality between per-pupil instructional expenditure at each school site. The McLoone Index statistic was .82 which resulted almost a perfect equity of 1.0 in the ratio needed to raise schools to the median level of distribution in per-pupil instructional expenditure. The Theil Index statistic was .01 on a 0 (perfect equity) to 1 (high inequity) scale which indicated almost a perfect equity where all the elementary have the same per-pupil instructional expenditure.

The coefficient of determination (refer to Table 4.13) included the level of variability using the per-pupil instructional expenditure at fifteen schools as the dependent variable in relation to the predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students,

percentage of students in special education, and average of teacher experience). The coefficient of determination or adjusted R squared resulted in .534 on a scale ranging from 0 (no inequity) to 1 (high levels of inequity) in the SPSS tabulation. The results indicated that the per-pupil instructional expenditure is influenced by the independent variables producing a moderate level of inequity within the fifteen elementary schools.

The multiple regression model allowed for a separation between the independent variables to determine the individual effect on the per-pupil instructional expenditure. The ANOVA (refer toTable 4.14) illustrated the predictor variables had a statistically significant effect on the instructional expenditure in the fifteen schools with a Sig. result of .047. The coefficient table (refer to Table 4.15) evaluated each predictor variable independently by detailing which coefficient was statistically significant. The results indicated teacher experience was the only statistically significant variable affecting the per-pupil instructional expenditure for those fifteen elementary schools. The residuals statistics (refer to Table 4.16, Figure 4.20, Figure 21, and Figure 4.22) indicated the normality requirement for variance was met for the data in the model, so the results were statistical significant.

Research Question 2: Findings Summary

Research question 2 queried the effect of PTA revenue on the per-pupil instructional expenditure at each elementary school. Answering the question involved calculating the equity assessments from the sub-sample of fifteen elementary schools with only the dependent variable of per-pupil PTA revenue, and then re-calculating the tests using a dependent variable of both per-pupil instructional expenditure combined with per-pupil PTA revenue. This allowed a thorough assessment of the statistical measures.

Fifteen Elementary Schools Per-Pupil PTA Revenue

The equity assessments in Table 5.1 included the equity results for the per-pupil PTA revenue in fifteen elementary schools. The results determined if "no inequity" or "high inequity" exists between the elementary schools' per-pupil instructional expenditure in the anonymous school district. The coefficient of variation was .46 on a 0 (no inequity) to 1 (high levels of inequity) scale which indicated a moderate level of inequity among the elementary schools in terms of per-pupil PTA revenue. The elementary schools have a difference in per-pupil PTA revenue at the fifteen school sites. The Gini Coefficient for the fifteen elementary schools had a low statistic of 0.25 on a 0 (no inequity) to 1 (high inequity) scale which relayed some inequity between per-pupil PTA revenue at each school site. The McLoone Index statistic was .62 which resulted in a lower level of equity the further the results get from 1.0 in the ratio needed to raise schools to the median level of distribution in per-pupil instructional expenditure. The Theil Index statistic was .11 on a 0 (perfect equity) to 1 (high inequity) scale which indicated a low level of inequity in per-pupil PTA revenue.

The coefficient of determination (refer to Table 4.19) included the level of variability using the per-pupil PTA revenue at fifteen schools as the dependent variable in relation to the predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). The coefficient of determination or adjusted R squared resulted in .580 on a scale ranging from 0 (no inequity) to 1 (high levels of inequity) in the SPSS tabulation. The results indicated that the per-pupil PTA revenue was influenced by the independent variables producing a moderate level of inequity within the fifteen elementary schools.

The multiple regression model allowed for a separation between the independent variables to determine the individual effect on the per-pupil PTA revenue. The ANOVA (refer to Table 4.20) illustrated the predictor variables had a statistically significant effect on the instructional expenditure in the fifteen schools with a Sig. result of .032. The coefficient table (refer to Table 4.21) evaluated each predictor variable independently by detailing which coefficient was statistically significant. The results indicated that none of the predictor variables were statistically significant affecting the per-pupil PTA revenue for the fifteen elementary schools. The residuals statistics (refer to Table 4.22, Figure 4.25, Figure 26, and Figure 4.27) verified the normality requirement for variance was met for the data in the model, so the results were statistical significant. The chart (refer to Figure 4.23) illustrated the PTA memberships coincided with per-pupil PTA revenue though SPSS analysis deemed the relationship not statistically significant.

Fifteen Elementary Schools Per-Pupil Instructional Expenditure and Per-Pupil PTA Revenue

The equity assessments in Table 5.1 included the equity results for the fifteen elementary schools. The results determined if "no inequity" or "high inequity" exists between the elementary schools' per-pupil instructional expenditure coupled with the per-pupil PTA revenue in the anonymous school district. The coefficient of variation had a low result of .12 on a 0 (no inequity) to 1 (high levels of inequity) scale which indicated low levels of inequity among the elementary schools in terms of per-pupil instructional expenditure coupled with the per-pupil PTA revenue. The elementary schools were similar in revenue for per-pupil instructional expenditure coupled with the per-pupil PTA revenue. The Gini Coefficient for the fifteen elementary schools had a low result of 0.05 on a 0 (no inequity) to 1 (high inequity) scale which relayed almost a perfect equality between per-pupil instructional expenditure at each school site.

The McLoone Index calculation was .83 which resulted closer to a perfect equity of 1.0 in the ratio needed to raise schools to the median level of distribution in per-pupil instructional expenditure. The Theil Index calculation was .01 on a 0 (perfect equity) to 1 (high inequity) scale which indicated almost a perfect equity where all the elementary schools have the same per-pupil instructional expenditure.

The coefficient of determination (refer to Table 4.26) included the level of variability using the per-pupil instructional expenditure coupled with per-pupil PTA revenue at fifteen schools as the dependent variable in relation to the predictor variables (percentage of parents attending parent/teacher conferences, percentage of economically disadvantaged students, percentage of gifted/talented students, percentage of students in special education, and average of teacher experience). The coefficient of determination or adjusted R squared resulted in .492 on a scale ranging from 0 (no inequity) to 1 (high levels of inequity) in the SPSS tabulation. The results indicated that the per-pupil instructional expenditure was influenced by the independent variables producing a moderate level of inequity within the fifteen elementary schools.

The multiple regression model allowed for a separation between the independent variables to determine the individual effect on the per-pupil instructional expenditure coupled per-pupil PTA revenue. The ANOVA (refer to Table 4.27) indicated the predictor variables did not have a statistically significant effect on the per-pupil instructional expenditure coupled with per-pupil PTA revenue in the fifteen schools with a Sig. result of .063. Table 4.28 evaluated each predictor variable independently by detailing which coefficient was statistically significant. The results indicated that none of the predictor variables were statistically significant affecting the per-pupil instructional expenditure coupled with per-pupil PTA revenue for those fifteen elementary schools. Teacher experience could be relevant with a calculation of .052. The

residuals statistics (refer to Table 4.29, Figure 4.30, Figure 31, and Figure 4.32) confirmed the normality requirement for variance was met for the data in the model, so the results were statistical significant.

<div align="center">**Conclusions**</div>

Research Question 1: Conclusions

Research question 1 asked if there is a difference between the per-pupil instructional expenditure at each elementary school. The equity assessments were applied to all twenty-five schools and the sub-sample of fifteen schools. The equity assessments (coefficient of variation, Gini Coefficient, McLoone Index, and Theil Index) were applied to applied separately each of the independent variables of twenty-five schools and fifteen school (those that provided PTA revenue data). The results illustrated a low level of inequity for each independent variable on a scale of no inequity (perfect equity) and high inequity between the per-pupil instructional expenditure between the school sites. Further investigation is needed to evaluate the cause of those variances.

The equity assessments of coefficient of determination and multiple regression were applied to the independent variables of twenty-five schools and fifteen schools. The analysis used these equity measurements to assess a detailed evaluation of the variances in the per-pupil instructional expenditure. The schools varied in various facets of student body compositions from ethnic makeup, gender makeup, and bilingual students which were not assessed for this study. The predictor variables that were evaluated included parents attending parent/teacher conferences, economically disadvantaged, gifted/talented, special education, and teacher experience. A thorough breakdown of the predictor variables (except the student body composition) illustrated there was a moderate correlation between the predictor variables and

per-pupil instructional expenditure. The coefficient of determination detailed a moderate level of inequity meaning the predictor variables influenced the per-pupil instructional expenditure model. Further analysis through the multiple regression model indicated that some of the predictors had a greater effect and were statistically significant in determining the variance. The regression analysis assessed each predictor variable in detail to assess gifted/talented percentages, special education percentages, and teacher experience had a statistically significant effect on per-pupil instructional expenditure for all twenty-five elementary schools while only teacher experience was statistically significant for the sub-sample of fifteen schools in per-pupil instructional expenditure.

Research Question 2: Conclusions

Research question 2 queries the effect of PTA revenue on the per-pupil instructional expenditure at each elementary school. The equity assessments were applied to the sub-sample of fifteen schools that provided PTA revenue data. The equity assessments (coefficient of variation, Gini Coefficient, McLoone Index, Theil Index, coefficient of determination, and multiple regression) were applied to the sub-sample. The assessments illustrated a level of inequity existed between the schools' per-pupil PTA revenue. The inequity in the per-pupil revenue does not affect the per-pupil instructional expenditure based on the results from the first question.

The schools varied in various facets of student body compositions from ethnic makeup, gender makeup, and bilingual students. Other factors contributing to the differences were parents attending parent/teacher conferences, economically disadvantaged, gifted/talented, special education, and teacher experience. A thorough breakdown of the variables (except the student body composition) conveyed a correlation between the predictor variables and per-pupil instructional expenditure/per-pupil PTA revenue, but it was not statistically significant. The

coefficient of determination included a moderate level of inequity meaning the predictor

variables influenced the per-pupil instructional expenditure model. Further analysis through the

multiple regression model indicated that some predictors had a greater effect and were

statistically significant in determining the variance. The regression analysis assessed each

predictor variable in detail to validate gifted/talented percentages, special education percentages,

and teacher experience had a statistically significant effect on per-pupil instructional expenditure

for all twenty-five elementary schools while only teacher experience was statistically significant

for the sub-sample per-pupil instructional expenditure. The size of the population and the

attributes of the population probably contributed to the variance observed in the sub-sample

population because no other variables were changed. Since the teacher experience was the

common variable for the entire population and the sub-group, it could be a determinant in the

differences in per-pupil instructional expenditures.

Implications of the Study

The implications from the study confirmed inequity exists in per-pupil instructional

expenditure and per-pupil PTA revenue between the elementary schools. The data assessed the

elementary schools operating independently of one another. The per-pupil instructional

expenditure displayed little variance meaning the distribution is standardized. The study

explained the need for more oversight and accountability in regulating the PTA revenue

generated in the elementary schools. Collecting and analyzing PTA revenue data such as

acquisition and expenditure at the district-level and state-level, would aid in researching

expenditure and revenue usage, student benefit, and assessing equity. Policies at the local level

could track and assess the financial data to create an equitable system between each school site.

The study presented data supporting a non-profit PTA revenue had large gaps among the

individual elementary sites ranging from $22,757 to $116,486 (refer to Table 4.2). Further inquiry determined if those variances affected operations at the elementary schools' student learning, student opportunities, or school-sponsored activities.

Contribution to the Theoretical Literature

The study contributed to understanding and recognizing inequity within a suburban school district by highlighting financial disparities and investigating those relationships with independent variables. The equity assessments in this study resulted in determining inequity between the elementary schools, but only a few predictor variables were associated with those variances. The equity audit assessed teacher equity, programmatic equity, and economic equity and attempted to identify systemic inequities or educational gaps within the school district (Skrla et al., 2009). The theoretical literature was based on the following frameworks: equity, social justice, and critical resource theory.

Equity framework was addressed in this study through the intra-district distribution patterns of instructional expenditure and PTA revenue observed at the elementary schools. Mhando (2016) highlighted the disparities between middle income and high-poverty neighborhoods. While this study accounted for the economically disadvantaged in the coefficient of determination and multiple regression, the results were deemed statistically insignificant. The results convey little difference in the horizontal and vertical equity of funding allocations for instructional expenditure because of the district funding formula. Although, wealth neutrality (Carr et al., 2007) was observed from the variances of PTA generated revenue at each school.

Social justice framework was based on the premise of serving all children from all backgrounds (Rawls, 1971; Lugg and Shoho, 2006). Rawls' theory (1971) was centered around a distributive form of justice towards marginalized populations. This study highlighted the

disparity in the PTA revenue at each school with minimal variance in instructional expenditure. Some studies researched the distribution of non-profit organization funds to less fortunate schools within the district (Brown et al., 2017; Weese, 2018; Jaffe, 2022). Other studies observed non-profit organizations contributing to the schools by purchasing computers, books, playground equipment, and after-school programs (Bryant, 2001). Those studies were bolstered by this study in identifying financial disparities in non-profit revenue and district instructional expenditure between elementary schools.

Critical resource theory focused on the fairness and opportunity which systemically advantaged the dominant group (Kaplan and Owings, 2023). Cohoon (2021) conducted a study on the relationship of per-pupil expenditures in five middle schools which detailed variations in school equity. This study illustrated inequity among groups through the disparities in instructional expenditure and PTA generated revenue at the different elementary sites. The study contributed to recognizing the dominant versus marginalized groups at elementary schools within the school district based on uneven distribution of funds.

This study offered another financial perspective on intra-district disparities within the school system. Many studies focused on inequity between neighboring school districts or inadequate state funding formulas (Webb, 2017), but schools within school districts were marginalized not necessarily by a funding formula but by the non-profit organizations' adeptness in amassing more revenue and resources. Many of the studies have shown the financial differences attributed to education support organizations within school districts (Frisch, 2017), but they do not show litigation to address the unfair circumstances. This equity audit highlighted teacher experience as a common denominator in per-pupil instructional expenditure which linked to teacher effectiveness and student outcomes (Mathewson, 2020). Research had shown a strong

correlation between additional per-pupil expenditure and student achievement (Ballard and Maiden, 2018). This study allowed a further investigation into the relationship between the revenue and student outcomes.

Conclusion

In summary, the purpose of this study was to use an equity audit to examine the relationship between intra-district school per-pupil instructional expenditure coupled with PTA group revenue at twenty-five elementary school sites in an anonymous suburban school district in Oklahoma to determine the effect on the per-pupil spending. Highlighted were the inequities in instructional expenditure and in PTA revenue collected at each elementary school. The differences in per-pupil expenditure and revenue were connected to the variances in each elementary school. Teacher experience seemed to affect the per-pupil instructional expenditure. Further investigation would determine what attributed to this effect, but teacher experience is linked to teacher effectiveness and student performance (Mathewson, 2020). The data supported the correlational findings, but it was not solely attributed to the predictor variables chosen for this study. Equalizing the instructional expenditure and PTA revenue may or may not create greater student outcomes, but additional studies will aid in defining the impact on the educational atmosphere and student development. Social justice leadership entails advocating for the elimination of marginalization in the school system (Theoharis, 2007).

Recommendations for Future Research

Potential Research Suggestions:

Recommendation 1

Non-profit organizations such as the PTA groups were not accounted for in the school budgets. A study to determine if revenue was directly spent on student achievement and

student learning with the additional funds from non-profit organizations could benefit the school districts in their equity endeavors.

Recommendation 2

A study of the different components of instructional expenditure might give greater insight into the observed variances at each school site.

Recommendation 3

A comparative study entailing the academic performance of elementary students in relation to the per-pupil instructional expenditure and/or the per-pupil PTA revenue. This study could produce data about the effect of additional funding and how the spending affects student outcomes.

Recommendation 4

A comparative study between the various parent groups to determine if there is a difference in PTA revenue acquisition, and the effect it had on instructional expenditure. This study reviewed the PTA (parent teacher association) which is connected to a state and national group. Other non-profit groups such as PTO (parent teacher organizations) or PTSO (parent teacher student organizations) use an independent localized mode of collecting revenue.

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Appendix A

Oklahoma PTA Bylaws 2019

GUIDELINES/PROCEDURES

All Oklahoma PTA and PTSA units have Uniform Unit Bylaws. These bylaws **cannot** be changed by individual units.

<u>**DEFINITION OF STANDING RULES**</u>

Standing rules are an extension of the bylaws. They define procedures and relate to details of the administration of your particular PTA Unit. Your local unit Standing Rules **cannot** conflict with the Uniform Unit Bylaws.

Standing Rules must be voted on and adopted by a majority vote of the general membership annually. <u>Standing Rules may be amended or suspended by a two-thirds (2/3) vote.</u>

The amount charged for annual membership dues may be changed no more than once per membership year.

You are required to include the following information in your PTA Unit standing rules.

1. Article V, Section 4:
   Specify the amount of annual membership dues to be paid by each member (this amount must include the National and State portions).

2. Article VI, Section 2:
   Specify any additional elected officers

3. Article VI, Section 3:
   Specify the month in which new officers will be elected into office during the general membership meeting.

4. Article VI, Section 4:
   Specify the date on which officers assume their duties: Example - July 1 end of fiscal year, or end of school year and how long their term will be. Term is the number of years an officer can hold an office. Uniform Bylaws allow for an officer to hold for two consecutive terms. Consider: if the term is 2 years that would possible allow for someone to hold the same office for 4 years

5. Article VII, Section 1b:
   List other duties of the President.

6. Article VII, Section 2c:
   List other duties of the Vice President. If you have more than one (1) Vice President, list the duties of each.

7. Article VII, Section 3f:
   List other duties of the Secretary.

8. Article VII, Section 4d:
   Specify the other officer whose signature must be on file for the purpose of writing checks. example President and one other officer

9. Article VII, Section 4d:
   List other duties of the Treasurer.

10. Article VIII, Section 3:

List other members of the Board of Directors. Examples would be: Teacher Liaison, Parent Resource Officers, etc.

11. Article VIII, Section 6b:
Specify the number of days in advance that is required to conduct a specially called Board of Directors meeting.

12. Article VIII, Section 7: Specify the size of quorum for the Board of Directors meetings.
 A quorum is the number of Board of Directors that can be expected to attend regular meetings of the PTA. Once this number has been stated in the standing rules, there must be that many members present at a meeting for any business requiring a vote. Before voting begins, the President must be assured a quorum is present.

13. Article IX, Section 2:
List the standing committees, including information about duties

14. Article IX, Section 3:
Specify the term of office for standing committee chairs.
Term is the number of years a chair can hold the same position.

15. Article X, Section 1:
Specify the months and number of general membership meetings. Example 3 (three) is advised, 1 for budget approval at beginning of school, 1 for election of nominating committee, 1 election of officers

16. Article X, Section 2:
Specify the number of days in advance that the general membership must be notified of a specially called membership meeting.

17. Article X, Section 4:
Specify the size of quorum that must be present to transact business. A quorum is the number of members that can be expected to attend regular meetings of the PTA. Once this number has been stated in the standing rules, there must be that many members present at a meeting for any business requiring a vote. Before voting begins, the President must be assured a quorum is present.

18. Article XI, Section 2:
Specify how delegates and their alternates are selected if your unit belongs to a council. Example: Elected or Appointed

19. Article XII, Section 2:
Specify the process for selecting delegates and alternates for attendance at the State PTA Convention.
Example: vote of Board of Directors, or incoming officers, or all board members as funds allow – if funds don't allow all officers, vote will be taken, etc.

STANDING RULES FOR _____

1. Article V, Section 4:

   Annual membership dues to be paid by each member (this amount must include the National and State

   portions) will be _____

2. Article VI, Section 2:

   Additional elected officers of this PTA will be:

   _____

   _____

   _____

3. Article VI, Section 3:

   New officers will be elected into office during the general membership meeting in

   _____

4. Article VI, Section 4:

   New officers assume their duties on _____ their term will be for _____

   year(s).

5. Article VII, Section 1b:

   Other duties of the President are

   _____

   _____

   _____

6. Article VII, Section 2c:

   Other duties of the Vice President are:

   _____

   _____

   _____

   _____ If there are more than one (1) Vice President, list the duties of each.

Additional Vice Presidents and their duties

_____

_____

_____

7. Article VII, Section 3f:

   Other duties of the Secretary are

   _____

   # STANDING RULES FOR _____

   _____

   _____

8. Article VII, Section 4d:

   The Treasurer, _____ and _____ will be the check signers and their signatures must be on file with the bank for the purpose of writing checks.

9. Article VII, Section 4i:

   Other duties of the Treasurer are

   _____

   _____

   _____

10. Article VIII, Section 3:

    Other members of the Board of Directors are

    _____

    _____

    _____

11. Article VIII, Section 6b:

    The Board of Directors will be given _____ days notice of a specially called board meeting.

12. Article VIII, Section 7:

    A Board of Directors meeting requires _____members to be present to establish a quorum to transact business.

13. Article IX, Section 2:

The standing committees and duties for this PTA are:

14. Article IX, Section 3:

Standing committee chairs term of office will be _____ year(s)

STANDING RULES FOR _____

15. Article X, Section 1:

This unit will hold ____ General Membership meetings per year, they will be held during the months of:

_____

16. Article X, Section 2:

The general membership will be given _____ days notice of a specially called general membership meeting.

17. Article X, Section 4:

A general membership meeting requires _____members to be present to establish a quorum to transact business.

18. Article XI, Section 2:

Council delegates and their alternates are selected by

_____ (if your unit belongs to a council)

19. Article XII, Section 2:

The PTA delegates and alternates representing this PTA at the State PTA Convention will be:

_____

selected by

_____

_____

Appendix B

E-mail Soliciting Data

Season greetings! First off, I am a proud ████████████ community member and PTA member. My kiddos have attended ████████, ██████, █████████, ████, and ████████. I am currently in the educational leadership doctoral program at the University of Oklahoma. My dissertation is on the variances in PTA programs at the elementary schools. I was using █████ Schools 2018-2019 school-year data (2019 to present might be skewed due to CoVid), but the details will be anonymous in my study. I wanted to collect data on the following:

-Percentage/number of PTA memberships at your school site
-A list of PTA-sponsored or assisted PTA-sponsored events (any events your PTA helps coordinate)
-Total revenue generated through your PTA (memberships, fundraisers, donations, etc.)

If you could assist me with any information or tell me where I can get the information, I would be extremely appreciative! Thank you in advance!

Warm wishes,

Larahn Frazier, M.Ed.
Doctoral Student
University of Oklahoma