A Multi-level Quantitative Analysis on Factors Affecting Special Education Compliance

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A Multi-level Quantitative Analysis on Factors Affecting Special Education Compliance

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ABSTRACT

The Individuals with Disabilities Education Act is a federal law that requires that students with disabilities are provided with a Free and Appropriate Public Education. The cost of ensuring FAPE can be quite high for students that require more specialized supports; however, in not meeting that standard, districts may be liable for compensatory education. Much of the responsibility to fund special education, especially in Pennsylvania, falls on the schools to raise through local taxes. This has put schools in very challenging circumstances in regard to their budget. States across the country have conducted a Costing Out Analysis to review the necessary spending levels reviewed for education. Many studies discuss the need for higher funding allocations from state and federal governments so that the high-cost burden does not fall on LEAs and local tax dollars to meet the IDEA compliance requirements. While overall compliance with IDEA has improved over time, it is still an issue that needs to be addressed. This study used multiple regression to determine if there is a link between compliance with the Cyclical Monitoring for Continuous Improvement and factors such as special education spending and percentage of population receiving special education supports. The data are all public record and was collected through Pennsylvania Department of Education online Databases. The data revealed a regression model suggests that the relationship between the number of areas of non-compliance has a significantly moderate negative correlation with both the number of special education expenditures and the percentage of special education students. The model can explain or predict 11.4% of the number of areas of noncompliance in a school district.

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Chapter 1: Introduction

Since the inception of the Education of All Handicapped Children Act (EAHCA) of 1975, now commonly referred to as the Individuals with Disabilities Act (IDEA), through its most recent reauthorizations, schools across the United States have been required to provide a Free and Appropriate Public Education (FAPE) for all students, with an emphasis on students with disabilities. Prior to the EAHCA, the Education of the Handicapped Act (EHA) was created in 1970 to address the concern of education for children with disabilities (Yell, 2019). This law was aimed at beginning or augmenting programs for students with disabilities by providing federal grant money to states that looked to initiate or enhance programs (Yell, 2019). This did not have the intended effect, however; in 1974, a congressional investigation found that millions of school aged children with disabilities were not receiving any educational service or were attending school but not receiving an appropriate education that could meet their needs (Yell, 2019).

The intent of the EAHCA was to provide children with disabilities the right to an education while also providing "a process by which State and local educational agencies may be held accountable for providing educational services for all handicapped children" (Wright & Wright, 2007, p. 14). By ensuring that children with disabilities had a right to education and that states and districts were accountable to provide it, excluding children with special needs became much more complicated. Similar to the EHA, the EAHCA provided federal funding to states in order to help schools be able to provide the supports and services for students with disabilities (Yell, 2019).

In requiring districts to educate students with disabilities— and, more importantly, to educate them appropriately— schools now had more students that they were required to educate,

which came with increased costs. Some of these students would require highly specialized services and supports to have their needs met, which came with even more cost. Students with disabilities often require more support to receive an education, such as alternate curriculums, additional staff, personal care assistance, enlarged fonts, assistive technology, and braille. While not all of these are needed by every student who receives special education, districts must be able to provide them to a student if they are needed. The federal money attached to the EHA, EAHCA, and the IDEA was designed to help offset these costs; however, funding alone is insufficient to provide all students with disabilities the services and supports needed to provide quality education. Without proper funding, state education agencies (SEAs) and local education agencies (LEAs) are put in a difficult position to ensure that students with disabilities are receiving an appropriate education that meets their needs, as intended through the IDEA.

A growing population of students with disabilities, along with increased expectations and unstable funding to provide required programs, has created a problem for school districts. Many districts in Pennsylvania are facing challenging budget situations and have had to rely heavily on local funding to support required education programming. This has led to cutting programs and/or increasing taxes, neither of which are viewed favorably with the communities that they serve.

Problem and Purpose of the Proposed Research Project

Providing special education services that meet the mandate of a FAPE specified in IDEA is costly. The funding that comes from IDEA should significantly help offset that cost; however, districts are only receiving about 13% of the national average for the cost per special education student to ensure that they are meeting compliance. While funding levels may fluctuate or only cover a small percentage of what is needed, the federal and state regulations on what must be

provided remains unchanged. A decrease in any funding from the federal or state governments can have a negative and profound impact on districts as they may need to cut programs and/or increase taxes (Tatu, 2021). These situations are difficult, as decisions must be made regarding what to cut. While special education programs may not be cut directly due to federal laws requiring specific services/supports be provided to students with disabilities, they can be disrupted by staff cuts and personnel shifts. Additionally, while many schools make difficult budget decisions, it is important to note that these decisions are further complicated due to the growing number of students in need of special education services.

While these tough budget situations are occurring and are forcing decisions on cutting programs or raising taxes, districts may not be able to expand or improve internal special education programming to provide a higher quality of services/support to special education students. This inability to expand or improve internal services/supports puts districts in a position where they may be unable to meet the needs of some students. By providing rigorous, but necessary, requirements on SEAs and LEAs without stable and appropriate funding, the federal government is instigating a no-win situation for SEAs and LEAs regarding special education. Many districts are left with the options to cut programming or raise local property taxes to make ends meet year after year. This is not a sustainable approach to education and is likely a contributing factor to burnout within the profession (Augenblick et al., 2009). The purpose of the study is to identify whether a correlation exists between the funding and performance on Cyclical Monitoring for Continuous Improvement (CMCI). Establishing a correlation could support future research that would be worth looking at on a wider scope—across the entire state, region, or even nationally—to establish a correlation on a wider scale. Additionally, future studies could help establish causation between the two. The hope is that LEAs will receive the revenue needed

from the federal government and their state to be able to provide adequate special education programming. I also examine the levels of spending and percentage of special education population to see whether they have any effect on CMCI performance.

Major Research Questions and Research Hypotheses

The hypothesis of this study was that a correlation exists between a district's spending level on special education programming and their performance on their CMCI—commonly known as the special education audit. More specifically, there is a negative correlation that when spending levels are higher that areas of non-compliance are fewer. In analyzing the data, I attempted to answer the following questions:

1. What percentage of schools in Southwestern Pennsylvania are spending at the 2007 Costing Out Study for Pennsylvania's recommended weight cost of 1.3 times the cost per student?
2. Based upon the data, are the districts that meet the weighted cost of 1.3 for spending per pupil special education students more likely to yield better results on CMCI?
3. Is there an association between special education expenditures, weighted costs, and percentage of special education students in the district on the number of areas of non-compliance on their CMCI.

Definition of Important Terms/Acronyms

In this section, I present terms relevant to the topic of this dissertation as well as their corresponding definitions.

***Annual Financial Report (AFR)*:** AFRs are detailed financial reports that districts are required to submit to the Pennsylvania Department of Education annually in accordance with the Pennsylvania School Code (Pennsylvania Department of Education, 2021a).

***Assistive Technology*:** Assistive technology refers to equipment, an item, or a product that is utilized to maintain or improve functional capabilities of a person with a disability (Wright & Wright, 2007).

***Compensatory Education*:** Compensatory education refers to services provided to a student to offset services that were not provided or were not appropriately provided (Yell, 2019).

***Costing Out Study*:** A costing out study is a study that evaluates data to determine the specific level of resources required across various areas (Augenblick et al., 2009).

***Cyclical Monitoring for Continuous Improvement (CMCI)*:** CMCI is comprehensive monitoring conducted by the Pennsylvania Bureau of Special Education on local special education programs across Pennsylvania (Pennsylvania Technical Training and Assistance Network, 2018).

***Due Process Hearing*:** Due process hearing is a procedural safeguard available to families that allows them to resolve disputes with school districts in regard to an identification of disability, evaluation, programming, placement, or provision of free appropriate public education in accordance with the IDEA (Yell, 2019).

***Education of All Handicapped Children Act (EAHCA)*:** EAHCE is a federal law that was enacted in 1975 which required schools to provide students with disabilities a FAPE (Yell, 2019).

***Education of the Handicapped Act (EHA)*:** EHA was a federal law passed in 1970 that provided some funding to districts if they attempted to implement or improve current programs for students with disabilities (Yell, 2019).

***Free and Appropriate Public Education (FAPE)*:** FAPE refers to supports and services provided through special education that are required for a student with disabilities to make

educational benefit and are provided at no charge in accordance with IDEA and state requirements (Wright & Wright, 2007).

***Individuals with Disabilities Education Act (IDEA)*:** IDEA was a reauthorization of EAHCA that provides legal requirements for schools to provide students with disabilities an education that meets their needs (Yell, 2019).

***Least Restrictive Environment (LRE)*:** LRE is a legal requirement to educate a student in an educational setting that provides students with disabilities the opportunities to be educated with their nondisabled peers as much as possible (Wright & Wright, 2007).

***Local Education Agency (LEA)*:** LEA is a local board or agency responsible for decision making of a school district (Wright & Wright, 2007).

***Penn Data*:** Penn data refers to information that is collected annually by the Pennsylvania Department of Education from school districts on special education information, such as the number of students receiving special education services, percentage of students receiving special education, and a breakdown of the number of students in each disability category (Capital Area Intermediate Unit, 2016).

***State Education Agency (SEA)*:** The state board of education or agency responsible for supervising education programing of elementary and secondary education programing throughout the state (Wright & Wright, 2007).

***NCES*:** National Center for Educational Statistics

***PDE*:** Pennsylvania Department of Education

Significance of the Problem

Districts are required through federal law to ensure that they are providing students with disabilities with a FAPE. The cost in doing so can vary and fluctuate based upon the needs of

students that enter and leave the district. Districts are, however, provided a small amount of funding from the federal and state government to see this goal to fruition. Therefore, local dollars from property taxes are shouldering the majority of the responsibility to provide the necessary programming that is mandated by federal and/or state law. If a district does not fund programming to the extent necessary, they may lose funding through sanctions or may be required to reimburse a family for services through compensatory education (Marchitello et al., 2019; Yell, 2019), rendering the financial situation worse.

By investigating the connection between spending and compliance, there is a possibility that the need for adequate special education funding—at both the federal and state level—may be revealed. In addition to paying out compensatory education, the district is likely to cover a portion of the attorney fees for the family in addition to their own, as IDEA stipulates that a portion of those fees should be covered if the family seeks a due process hearing on any issue (Yell, 2019). It is important to note that spending on special education not only ensures that all students are receiving a FAPE and that LEAs are complying with federal law, but spending is also helpful in reducing long term costs. Spending on programs like education or supported work programs allows people with disabilities to become more independent and reduce their dependency on federal entitlements, such as Supplemental Security Income (SSI; Shapiro, 1994).

Assumptions

Within the study, it was assumed that the data collected through public information were accurate. The data were required to be reported to the state and are made publicly available online. Because the data were not collected by the author firsthand, it was assumed that the data collected for compliance and oversight were accurate.

Limitations

The study itself is representative of 94 out of roughly 500 public school districts in Pennsylvania. Therefore, data trends may only be indicative of a correlation among these districts and not statewide. Similarly, Pennsylvania is only one of 50 states, so an association cannot be made on a national scale. While information on funding across various parts of the country was included in the literature review, the data examined were only taken from school districts in the following Pennsylvania counties: Allegheny, Beaver, Butler, Washington, and Westmoreland. Therefore, a correlation could only be established within this sample population. Regarding the relationship between lower spending and compliance, the study could establish only correlation, and not causation.

Summary and Transition to Chapter 2

Federal law requires that students with disabilities are provided with a FAPE; however, doing so can be costly, and the federal and state requirements habitually do not come with a sufficient level of financial support to LEAs to ensure they can provide what is required. By not supporting LEAs with enough financial resources, federal and state governments are requiring them to shoulder the financial load to meet this requirement, leading to challenging financial situations among LEAs. A miscalculation on programming needs could result in less money coming in through federal and state allocations, but it could also result in a district being required to pay for compensatory education and attorney fees to a family for not meeting their child's needs. In Chapter 2, I review the literature related to special education spending and compliance with IDEA. I provide a more in-depth look at the history of the federal laws enacted to support children with disabilities, the services they require, and how funding has impacted the ability to meet the needs of students.

Chapter 2: Literature Review

Chapter 2 includes three subsections: historical background information, review of literature related to research questions, and summary. In the review of literature related to the research questions, the literature is discussed within three subcategories that relate to the research questions, including (a) appropriate level of spending on special education, (b) effect of state and federal revenue on local special education programming, and (c) effect of special education spending levels on special education compliance. The subsections are not identical to the questions that were addressed in the study because I did not locate studies that were explicitly identical in nature. I did, however, discover information related to funding, spending, programming, and compliance in special education; however, the information was not unified.

Historical Background Information

When the EAHCA was established in 1975, schools were faced with a federal obligation to meet the educational needs of students with disabilities (Marchitello et al., 2019). Prior to the EAHCA, many students with disabilities were not receiving an education. Cases such as *Beattie v. State Board of Education, City of Antigo* (1919), ruled that a school was able to exclude students with cerebral palsy from attending school. One of the reasons for exclusion stated in the case was because the student's "physical condition and ailment produces a depressing and nauseating effect upon the teachers and school children" *(Beattie v. State Board of Education, City of Antigo*, 1919, p. 232). Without federal laws requiring that students with disabilities receive an education, students that were ruled to be intellectually weak, viewed as troublesome, or incapable to take normal care of themselves were ultimately allowed to be expelled from school (Yell, 2019). Prior to enacting the EAHCA in 1975, Congress had found that nearly 1.75 million students with disabilities in the United States were excluded from school while

approximately an additional 2.2 million were in programs that were not meeting their educational needs (Yell, 2019). Members of Congress felt that a FAPE should be available to all students with disabilities and pushed for the EAHCA to make it so (Yell, 2019).

In order for schools to begin properly educating the almost 4 million additional students with disabilities, they require funding. Funding was included within the legislation to help offset the financial strain created for districts, and a financial cap was set at 40% of the average costs to educating special education students (Marchitello et al., 2019). Funding has never reached the 40% threshold. For the 2020-21 school year, the federal government funded approximately 13% of the average cost per student and, over the past 20 years, the federal government has failed to provide even half of the capped amount (NEA, n.d.).

EAHCA was later reauthorized and became known as the IDEA. In order to receive funds IDEA, states were required to submit plans that would meet the requirements set forth by federal law (Yell, 2019). These plans needed to include details on the states policies and procedures for educating students with disabilities that aligned with rules with EAHCA (Yell, 2019). Once the plan was submitted to the federal government and it was determined whether the plan was sufficient, the state received federal funds; however, in taking those funds, the states were beholden to ensure that students with disabilities would receive a FAPE (Yell, 2019). These funds would pass from "the federal government to the state education agencies (SEAs) and, finally, the local education agencies (LEAs)" and were intended to "supplement state and local dollars and could not be used to supplant these funds" (Yell, 2019, p. 45). This required LEAs to demonstrate that their programs met the requirements of the state plan and also required the states to regularly monitor that the LEAs were maintaining a compliant program (Yell, 2019). While the funding sanctions can be put into place on an LEA if there are systematic compliance

issues, a lack of funding does not excuse the obligations that the LEA has to students eligible for FAPE or to be educated in the least restrictive environment (LRE) (Marchitello et al., 2019).

With compliance requirements through the federal law and a minimal amount of federal financial support to meet these requirements, both state and local governments covered the remainder of the cost for the necessary expenditures (NEA, n.d.). According to data on Pennsylvania school districts from 2018-19, much of the responsibility of special education costs falls on the LEA, which covers almost 73% of the cost compared to the roughly 22% from the state and approximately 5% of the federal government (Tatu, 2021).

While revenue from state and federal governments for special education continues to remain low, the number of students in need of special education continues to grow. From the 2009-10 school year to the 2019-20 school year, the percentage of students in need of special education across the United States rose from 13.4% to 13.7% (Riser-Kositsky, 2020). As of 2020, that number rose again to over 14% (NEA, n.d.). In addition to the growing number of students with disabilities, the cost associated in providing FAPE can be high. Students with disabilities may be in need of specialized services in order to be make progress (Aron & Loprest, 2012). Some examples of such services include, but are not limited to, the following:

- Speech and language therapy to assist with articulation, language, and/or augmentative communication.
- Physical therapy to improve their gross motor ability for tasks, such as safely navigating stairways at the school.
- Occupational therapy to improve their fine motor ability for tasks, such as being able to write.
- Personal care assistance with tasks like hygiene, toileting, self-care, and safety.

- Specialized transportation with wheelchairs or specialized safety equipment.
- Assistive technology for needs such as a braille typewriter for visually impaired students, FM system for hearing impaired students, and communication devices for nonverbal students.

A student may also require additional support to be academically successful in the classroom, which could come from a special education being included in the classroom or relocating the student for more intensive and/or specialized instruction (Aron & Loprest, 2012). There is also a chance that a student may require a more specialized program to meet their needs. Some of these needs may be so specialized that a school may not be able to provide the appropriate supports (Aron & Loprest, 2012). In this case, the LEA must send the student to another school that is more specialized and able to meet their needs, which includes the cost of transportation (Aron & Loprest, 2012). For example, Aron and Loprest stated that the cost to educate a student in a multiple disabilities support classroom was about $20,000. That cost could exceed $25,000 if the student needed to be educated in a specialized school, in addition to any required related services and/or transportation (Aron & Loprest, 2012). Over time, those costs have continued to rise. For example, data from the Pennsylvania Department of Education reveal for the 2019-20 school year that districts in Pennsylvania spent an average of about $16,214 per special education student, which is an increase from 2014-15 when this cost was $14,237 per special education student (Pennsylvania Department of Education, 2021c). This information was taken by dividing the total special education cost from the 2014-15 and 2019-20 Annual Financial Reports (AFRs) by the total number of special education students on the states Special Education Data Report for those years.

With the bulk of the funding for special education coming from local sources, school district leaders face challenges. Not only can districts have funding sanctions through the monitoring process if they are not adequately meeting requirements, but compensatory education may be provided to individual families if the district fails to provide FAPE to a student (Yell, 2019). Funding sanctions takes federal and/or state money away from an LEA for not complying with IDEA. Not appropriately funding special education programing can have negative financial implications, as a district may receive less money for not building a compliant program and may also be forced to pay for services to individual students if a student with disabilities is denied a FAPE. If a family believes that their child was denied FAPE, the family can seek compensatory education (Yell, 2019). The intent of compensatory education is to provide "additional educational services, above and beyond the educational services normally due a student under state law" (Yell, 2019, p. 308). This means that services that the LEA was not initially provided will be provided, including services to make up for services that should have been provided, if appropriate. While there are multiple avenues for a student to receive compensatory education, the costliest would be through a due process hearing, the intent of which is to resolve disputes between families and districts "regarding the identification, evaluation, programming, placement, or provision of FAPE to a student with disabilities under the IDEA" (Yell, 2019, p. 290). This route is most costly to the district, as the LEA may be responsible for compensatory education as well as "reasonable attorney's fees" to the family if they prevail on a "significant issue" within the lawsuit in addition to their own lawyer fees (Yell, 2019, pp. 300-301).

Many states, including Pennsylvania, have conducted a costing out study to evaluate adequate expenditure levels in order to meet the federal requirements through IDEA (Augenblick et al., 2009; Reagan, 2019). In a costing out study, research is conducted statewide to evaluate

data to determine the specific level of resources required across various areas (Augenblick et al., 2009). The focus on special education is to examine the various needs that IDEA and Pennsylvania require LEAs to meet and attempt to determine what it would cost for LEAs to meet the mandates of state and federal law (Augenblick et al., 2009). By understanding the cost associated with meeting the needs of students with disabilities, the state, in theory, is in a better position to ensure that LEAs have access to the necessary funding to meet their needs.

Review of Literature Related to Research Questions

Research specific to the study at hand does not appear to have been conducted previously. I shifted the review slightly to focus on the details within the questions: spending, funding, and/or compliance with special education. Additionally, the information has been organized into subcategories that relate to the research questions. The information in the subcategories addresses the problems related to this study.

Appropriate Level of Spending on Special Education

There are various opinions and data regarding the status of special education funding and whether or not it has an impact of the outcomes for special education students. Levenson (2012), for example, found that special education is too heavily focused on inputs, specifically, “more money, people, and services” (p. 37). Levenson analyzed performance on state testing and special education spending of high achieving schools to low achieving schools. A higher achieving district—in which more students score in the proficient range on standardized tests—was paired with a lower achieving district—in which fewer students score in the proficient range on standardized tests —with similar demographic information (Levenson, 2012). In one grouping, the author found that while the higher achieving district’s scores were 21% higher, the lower achieving district spent 30% more on special education (Levenson, 2012). While those

numbers appear to be alarming, the author did not specify how similar the districts were in terms of demographics or take into account that the spending differential could be due to a high number of low-incidence students in need of high-cost programs. Furthermore, Levenson (2012) collected data from five different states for the pairings and did not explain if pairings from different states exist. Different states may have their own state laws to follow and as well as differing costs of living that could impact the analysis.

Other researchers have examined significant differences for students with disabilities compared to their nondisabled peers in postschool employment, dropout rates, and the percentage of students in the "Below Basic Proficiency." On the National Assessment of Educational Progress (NAEP), Aron and Loprest (2012) found that 64% of 12th graders with disabilities fell in the "Below Basic Proficiency" category for reading, while only 24% of their nondisabled peers fell in this category. On the math section, 76% of students with disabilities fell in the "Below Basic Proficiency" category compared to only 34% of their nondisabled peers (Aron & Loprest, 2012). When comparing the graduation rates of students with disabilities to their nondisabled peers, Rowe et al. (2020) found that the national graduation rate for students with disabilities is 63% compared to 83% for their nondisabled peers. Additionally, Rowe et al. (2020) revealed that only about 17% of people with disabilities are employed compared to about 65% of individuals without disabilities.

The differing statistics on performance related to spending has had many states conduct a costing out analysis to determine appropriate spending levels for districts to meet federal and state requirements. Providing a quality education to students in need of special education can be costly for a variety of reasons, including the need for assistive technology as well as factors related to their disability (e.g., intellectual, emotional, physical) that can inhibit their learning—

or that of others—and require additional and/or individualized support. Further, supports and services needed may need to be provided in a specialized private program (Augenblick et al., 2009). The needs of the students can vary greatly from year-to-year and district-to-district. A high need student may move to a new district in the middle of the year and the district may not have budgeted for them; however, the student will still need to be provided with an education that meets their needs, and the district is required to cover that cost.

In a costing out study completed in Minnesota, Wan et al. (2012) found that the types and levels of need can impact the cost of education. While the authors did not specify the cost or a weighted calculation for special education students, they did reveal that properly educating an economically disadvantaged student costs about 2.5 times more than other students in Minnesota and about twice as much in New York (Wan et al., 2012). This is a relevant comparison, as Wan et al. (2012) also stated that both in Minnesota and nationally, special education students make up a high percentage of the economically disadvantaged students.

Pennsylvania conducted a costing out study in 2007. In 2009, the same group conducted a study focusing on special education funding in order for the state to be able to make appropriate reforms (Augenblick et al., 2009). In the previous study, it was determined that the average cost per student was $8,355 for 2008-09 school year (Augenblick et al., 2009). The authors examined specific groups and determined a weighted cost based upon that cost per student for the following groups: economically disadvantaged, English Language learners, students receiving special education, and students receiving gifted education (Augenblick et al., 2009). In the 2009 document, plans were put into place for every area of focus from the 2007 document, except special education. Augenblick et al. found that the data suggested a weighted cost for special education of 1.3 times the average cost per student. Ultimately, this means the $8,355 per student

would be multiplied by 1.3 ($10,861.50) to determine the average cost per special education student for their special education program to meet IDEA and state mandates (Augenblick et al., 2009). This cost is in addition to the $8,355 that the student receives for general education funding, which is a total cost of $19,216.50 (on average) to educate a special education student. The 1.3 weighted cost, plus the additional per student cost for all students, falls directly in between the cost for New York and Minnesota—two and two and half times more expensive, respectively (Wan et al., 2012).

Effect of State and Federal Revenue on Local Special Education Programming

The cost of meeting the needs and federal requirements for students with disabilities is expensive; thus, without adequate federal funding, stress can be put onto states and LEAs to make up that difference (Marchitello et al., 2019). Realistically, much of the burden across the country is placed on the LEA rather than the state. California LEAs, for example, cover approximately 61% of the special education costs (Marchitello et al., 2019). Marchitello et al. (2019) found that the total funding for special education from the federal government increased by about 6.5% from 2011 to 2019; however, between inflation and the increase in the number of students requiring special education, the increased funding was minimal. Marchitello et al. (2019) concluded there is a need for improvement in how the funding is aligned to support special education services and recommended that states and federal government both increase the funding they provide to districts in order to assist LEAs in achieving these educational goals.

The increase in the number of students with disabilities, along with the varying nature of needs that students with disabilities have, has placed pressure on LEAs to provide for needed services while simultaneously considering the community's tax dollars. With the high expectations and minimal funding from the federal government, local district leaders are

regularly faced with tough financial decisions as they attempt to reduce programs or increase local property taxes (Tatu, 2021). The decisions regarding what gets cut are difficult and always negatively impact someone. While special education programs may not be cut in funds or reduction in staff due to federal laws, they can be disrupted by staff cuts and personnel shifts. For example, a position in elementary may be cut, and the teacher in that position may have a special education certification and seniority over a special education teacher, moving them to special education while eliminating an experienced special education teacher. While this person may have an active certification, they may not have recent experience in special education, if any experience at all. This situation may be the best financial situation for the LEA; however, the transition from regular education to special education is not always an easy transition for teachers. This transition requires knowledge of, or training in, the following: special education law, the programs being used for various students, IEP writing, student specific needs/information, and a grasp of local policies and procedures related to special education that they may not have previous experience with. Additionally, the lack of appropriate funding forces districts to reduce costs to other programs, which may reduce course offering or resources that other programs may receive (Augenblick et al., 2009).

Effect of Special Education Spending Levels on Special Education Compliance

Augenblick et al. (2009) found that a high number of schools in the state of Pennsylvania do not have the resources needed to be able to provide a truly effective special education program for all of their students. LEAs are required by federal and state laws to provide the necessary services for students with disabilities to receive a fair education (Augenblick et al., 2009). The term “educational benefit” does not mean that the student is required to be provided the highest level of services available. In 1982, the United States Supreme Court heard the case

Board of Education of the Hendrick Hudson School District v. Rowley and found that "special education services provided to a student had to be 'sufficient to confer some educational benefit upon the handicapped child'" (Yell, 2019, p. 165). This sets a bar that slight progress and educational benefit for special education students is what is legally required through IDEA. When children with disabilities are not making progress or exhibit significant gaps in achievement and postsecondary targets, it is worth discussing if what is currently being provided is enough to meet the standard of slight progress. According to Augenblick et al. (2009), "Children with disabilities have a right to expect the basic services they need to succeed in school, but most school districts do not have the local resources to support their legitimate needs without additional state funding" (p. 13). Without appropriate funding from state and/or federal government, much of this burden falls on the local districts to meet. While this does not mean that some services are not provided at all, it may mean that the services may not be provided to a level that meets their intended purpose.

Although a service is being provided, it needs to be provided under appropriate conditions (e.g., duration, frequency, number of students) in order for the student to make appropriate growth (Harr et al., 2008). For example, if research suggests that a certain therapy should be provided once per week, providing it once per month is not meeting the basic needs of the student (Harr et al., 2008). Harr et al. (2008) examined compliance with duration through file reviews and service logs in Los Angeles Unified School District and found that students were not receiving all the required services. Further, there was a discrepancy in the rates by disability category. Students with multiple disabilities and/or deaf-blindness had an 82% compliance rate for duration of services, which was the highest of any disability group, while students with a specific learning disability had a compliance rating of 56% (Harr et al., 2008).

Rowe et al. (2020) stated that overall compliance rates with IDEA have improved over the years and suggested a shift towards a focus on improvement in outcomes (i.e., improved reading and math scores, graduation, and post-school outcomes) for students with disabilities. The purpose of IDEA, however, is to ensure that students with disabilities have access to the education they need in order to meet those outcomes. While improvements may be made in the area of compliance, districts across the United States are not 100% compliant, and many students do not have the opportunities to be successful in the pursuit of outcomes; thus, compliance with IDEA is a logical first step towards improvement toward outcomes. Taking into account the information from the study conducted by Harr et al. (2008), improvements need to be made in the area of compliance. Students with disabilities may not meet the expected outcomes without the proper services and supports.

Need for the Study

Through a review of literature, it does not appear that a study like this has previously been conducted. Based upon the information covered, special education is not adequately funded through the state and federal government; however, both the state and federal government have requirements to provide a FAPE to students with disabilities. School districts are financially strained as they are being asked to carry much of the financial responsibilities with local revenue while maintaining compliance with IDEA. Districts are audited through the cyclical monitoring for continuous improvement (CMCI) process to review various areas of compliance.

While a costing out study has been done in Pennsylvania to determine the level of spending required for special education, it does not appear that any follow up study has been conducted to determine whether spending recommendations have been implemented at the local level. Arguments can be made that a district cannot simply spend their way out of a problem;

however, if districts do not spend at an appropriate level and experience problems with compliance, it is difficult to suggest that a spending increase is not warranted. A review of the data was necessary to determine whether districts that are meeting the recommended level of spending fare better with compliance on the CMCI. Determining a correlation between the two may be crucial in obtaining appropriate funding from the state and federal governments. Additionally, examining CMCI results between districts that spend at the recommended level versus those that do not as well as how the percentage of special education students impacts the number of areas of noncompliance may help to understand the factors that hinder compliance with IDEA.

Purpose of the Study

The purpose of this study was to determine whether a correlation between special education spending or percentage of special education population and CMCI performance exists. If there is a correlation, future studies may focus more heavily on the details to determine if there is causation. Ultimately, if there are links between either, there would a case for the federal government provide the 40% that they mentioned in IDEA in order to assist districts in providing for their students with disabilities. Additionally, a correlation may help to encourage the states—specifically Pennsylvania, as the focus of the study— to increase their contributions to ensure that districts are upholding IDEA with integrity and providing students with disabilities the education to which they are entitled.

Summary

States across the country have conducted cost analysis in order to review the necessary spending levels reviewed for education. Researchers have highlighted the need for higher funding allocations from state and federal governments so that the high-cost burden does not fall

on LEAs and local tax dollars to meet the IDEA compliance requirements. Additionally, other researchers have found that students with disabilities are falling behind their nondisabled peers in certain outcomes, including math and reading assessments, graduation rates, and postsecondary employment. Improved outcomes is the desired goal for education, but students with disabilities require a level playing field with supports and services to be able to meet those expected outcomes. While compliance with IDEA has improved overall over time, it is still an issue that must be addressed.

In Chapter 3, I discuss the methodology of this study. Specifically, I provide a general description of the districts that were evaluated, review the hypothesis of the study, review the research questions related to the hypothesis, provide an overview of the procedures, discuss the quantitative methods used, and describe the data analysis technique utilized to analyze the data.

Chapter 3: Methodology

In Chapter 3, I review the methodology that was used to analyze the data to determine whether the hypothesis or the null-hypothesis is proved. The chapter is broken into six subsections: restatement of purpose, demographic information of targeted districts, hypothesis and research questions, research design, description of procedures, and data analysis. In the following section, I restate the purpose of the current study.

Restatement of Purpose

This study aimed to determine whether there is a correlation between special education spending levels and CMCI results. Focus was placed on school districts in Southwestern Pennsylvania, specifically the districts in the counties surrounding Allegheny County, which contains the city of Pittsburgh. In doing so, I examined various data. First, I examined the Augenblick et al. (2009) costing out study to determine whether districts are meeting the

recommended weighted special education spending of 1.3 times the base cost per student that was determined in the study. In researching this, I also determined the weighted cost multiplier for each district in Southwestern Pennsylvania.

In order to determine whether there is a correlation between CMCI results, I examined the most recent results to determine the number of areas of noncompliance for each district. Because the districts are audited on a cycle, spending data were pulled from the Annual Financial Report (AFR) that districts submitted to the state for the year prior to the audit. Through this analysis, I sought to determine whether noncompliance with the special education requirements can be linked to inadequate spending on special education programming.

Demographic Information of Targeted Districts

I interpreted publicly available data on public school districts in Allegheny and the counties that surround it (i.e., Butler, Beaver, Washington, and Westmoreland). Together, the five counties house 94 of Pennsylvania's 500 school districts. Based upon the National Center for Educational Statistics' (NCES, n.d.) locale classifications, 20 of the districts are considered rural, 71 are considered suburban, three are considered to be towns, and one is considered to be a city. The districts have a mix of urban, suburban, and rural districts. While subcategories exist in each classification (i.e., small, midsize, and large or fringe, distant, and remote), the general classification is similar. A city classification means the area is located within a principal city and inside an urbanized location. A suburban classification means the area is outside of a principal city, but is located in an urbanized location. NCES (n.d.) described a town as an area that is inside an urban cluster. An urban cluster is a geographic territory with between 2,500 and 50,000 people (Federal Register, 2021). A rural classification means that the area is outside of both an urban cluster and an urbanized area.

The Table 1 depicts data collected from the United States Census Bureau (2019).

Table 1

Demographic Information

	Allegheny	Beaver	Butler	Washington	Westmoreland
Population	1,216,045	163,929	187,853	206,865	348,899
White	79.9%	90.5%	95.8%	93.3%	94.7%
African-American	13.4%	6.5%	1.4%	3.3%	2.6%
Native-American	0.2%	0.2%	0.2%	0.2%	0.1%
Asian	4.2%	0.6%	1.5%	1.2%	1.0%
2+ Races	2.3%	2.2%	1.2%	1.9%	1.6%
Hispanic or Latino	2.3%	1.8%	1.6%	1.8%	1.3%
Median Home Value	$154,700	$41,100	$205,600	$167,900	$153,100
Median Household Income	$61,043	$57,807	$70,688	$63,543	$60,471
Percent of Persons in Poverty	10.8%	11.7%	7.8%	9.9%	10.5%

Together, the five counties account for just over 2.1 million people of the nearly 13 million people who live in the state of Pennsylvania. In comparing the individual counties to the overall demographics of the state, Allegheny County is the closest in terms of racial breakdown of population, median home value, and percent of persons in poverty (United States Census Bureau, 2019).

Hypothesis and Research Questions

The main hypothesis as well as the research questions that guided this study are as follows:

H_0: There is no association between a special education spending level on areas of noncompliance on the CMCI for school districts.

H: A significant association exists between school districts that have spending levels in special education on the CMCI.

RQ1: What percentage of schools in the sample population are spending at the 2007 costing out study for Pennsylvania's recommended weight cost of 1.3 times the cost per student?

RQ2: Based upon the data, are the districts that meet the weighted cost of 1.3 for spending per pupil special education students more likely to yield better results on CMCI?

RQ3: Is there an association between special education expenditures, weighted costs, and percentage of special education students in the district on the number of areas of noncompliance (CMCI)?

Research Design

I utilized quantitative data analysis to make a determination on the hypothesis. A multiple regression was used to analyze the data gathered from public information through the Pennsylvania Department of Education. The collected data were entered into a table and eventually analyzed through SPSS software. The data were compiled into an Excel spreadsheet so that I could easily sort the data into groups and determine averages.

Description of Procedures

For this study, IRB approval was not needed because all of the data were publicly available. I submitted the proposal to the IRB, and it was determined that approval was not required. The first step of data collection was the CMCI results. The CMCI report is done for

each monitoring and is publicly available. This took the longest, as I searched each district individually in the Pennsylvania Department of Education's database, as they are reported individually for each district. Once found, I downloaded the CMCI report and counted and recorded the number of noncompliant areas. I carefully counted the number of noncompliant areas and noted the year the CMCI was conducted. This helped narrow the search through the states expenditure data on the AFR, as that information determined the year(s) from which financial data needed to be collected. The financial data were extracted for the year preceding the CMCI. Districts are required to submit an AFR to the state each year, which breaks down the districts spending for the school year. That information is publicly available for all public schools in Pennsylvania. The focus of the AFR will be the "Current Expenditures" column of the districts in the five targeted counties, as well as the "Special Programs Expenditures" column, which refers to special education spending.

While examining the CMCI results, I reviewed the Penn Data that are available in the database for the year preceding the CMCI. Pennsylvania Department of Education collects special education data each year in accordance with IDEA focusing on the number of students receiving special education services, percentage of students receiving special education, and a breakdown of the number of students in each disability category. This is commonly referred to as Penn Data (Capital Area Intermediate Unit, 2016). The information is collected annually from every district in the state on the first of December as part of the IDEA child count requirement (Capital Area Intermediate Unit, 2016). The Penn Data includes the number of total students enrolled in the school, as well as the number of special education students for the year prior to the audit. This information was necessary in determining the cost per student calculations.

After the CMCI and Penn Data were recorded, I reviewed the years of the CMCI to determine which year(s) of AFR expenditure data would need to be reviewed. I downloaded those specific years and recorded the amount of money that was present in the "Current Expenditures" column and the "Special Programs" column for each district. Once the data were recorded, I calculated the cost per pupil and the cost per special education pupil. Additionally, I computed the percentage of special education students in the district. Next, I determined the weighted cost for special education for each district; it was then possible to determine the percentage of districts in Southwestern Pennsylvania that met the 1.3 weighted cost recommendation from the Augenblick et al. (2009) costing out study. The data in the table were sorted to answer Research Question 2 by examining the average number of areas of noncompliance for districts at or above the 1.3 weighted cost compared to those below it. I reviewed the data to determine the average areas of noncompliance between both groups: those that had a 1.3 weighted cost or higher and those that fell below the 1.3 weighted cost measure. The results from running the analysis through SPSS were used to answer Research Question 3.

For each individual district, I entered the weighted cost for special education spending and the areas of noncompliance into SPSS software. I examined 94 districts in the sample to determine whether an association exists between spending level and noncompliance. The result of this investigation may suggest associations between the variables of interest, but may not establish causation.

Data Analysis

Field (2009) described simple linear regression and multiple regression as an extension of correlation. Simple linear regression is used to examine the impact of one predictor variable on an outcome or dependent variable. Multiple regression is used to examine the relationship

between the dependent variable and multiple predictor variable. The analysis is based on slope intercept ($Y_i=a + b_1x_1+ b_2x_2+\ldots+b_nX_n$) in which Y_i is the dependent variable, the Xs are the predictor variables, b is the slope for the respective predictor variable, and a is the y-intercept or point at which the line of the slope crosses the y-axis (Field, 2009). The benefit of conducting a multiple regression is that allows for the ability to consider multiple predictors of a dependent variable, maximizing the power of the analyses. The data were entered and analyzed through SPSS. The SPSS system is available through the resources offered at Slippery Rock University and is a commonly used statistical analysis software.

Initially, I examined the data to establish the best approach to analyzing the data based on the guidelines commonly accepted and outlined by Field (2009). The statistical test assumptions considered were those that are recommended when performing a multiple regression analysis. The assumption of normality was used to examine whether any skewness or kurtosis existed in the continuous variables, including CMCI, Special Education Expenditures, Percentage of SPED students, and Weighted Costs. A Curve Estimation Analysis was used to assess the assumption of linearity in the continuous variables. The assumption of homoscedasticity was conducted using the ZPRED and ZRESD plots, and I examined the plots for a pattern of error variance. I examined multi-collinearity using the Variance Inflation Factor and Tolerance Factor output. If multi-collinearity existed, the power of the regression model would be suppressed. Lastly, I examined influential outliers using Mahalanobis Distance. Influential outliers can alter the outcome of the model by pulling the slope of the regression model in a positive or negative direction. Once all statistical assumptions were tested and satisfied, I conducted the multiple regression model.

All the assumption tests were found to be tenable; however, the skewness and kurtosis was beyond the acceptable level of |5.0| for the Special Education Expenditures (Field, 2009). After further examination of the data, I decided to remove the Pittsburgh School District because its expenditures were four times larger than those of the other districts. The removal of this one district corrected the normality results, and the assumption of normality was satisfied. Therefore, the regression model was based on 93 school districts. The regression model was conducted, and the results are reported in Chapter 4.

Summary

I utilized quantitative analysis methods to determine whether there is a correlation between special education spending and CMCI results. The data are all public and are currently available through Pennsylvania Department of Education online databases. The data were analyzed using the multiple regression analyses. I used SPSS to calculate the regression model to evaluate the hypothesis that increased spending levels, weight costs, and percentage of special education students in the district are associated with the number of areas noncompliance on the audit.

In Chapter 4, I present the information gleaned from the analysis. The resulting information assists in articulating the findings and whether the hypothesis or the null hypothesis was proved. Finally, I explain how the information led to answers to the research questions related to the hypothesis.

Chapter 4: Findings

In Chapter 4, I describe study's findings. The general purpose was to use the multiple regression analysis to determine whether an association exists between special education spending, weight costs, and percentage of special education students in a school district and the number of areas of noncompliance on the CMCI for 93 school districts in Southwestern Pennsylvania. I aimed to address two additional questions associated with spending and compliance.

Research Data

All the data pulled for this study were existing data that are accessible to the public. The information was pulled from the Pennsylvania Department of Education (2021b, 2021c, 2021d). The collected data collected are organized in Table 2.

Table 2

Performance & Spending Data on Districts within the Population

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
Aliquippa SD	2019	26	$21,369,342	1,011	$21,137	$4,361,010	220	$19,823	0.938
Allegheny Valley SD	2019	30	$20,078,532	932	$21,543	$3,035,276	135	$22,484	1.044
Ambridge Area SD	2020	9	$44,338,774	2,330	$19,030	$9,528,659	458	$20,805	1.093
Avella Area SD	2019	29	$9,948,501	520	$19,132	$1,194,636	110	$10,860	0.568
Avonworth SD	2018	1	$27,581,250	1,687	$16,349	$4,319,269	197	$21,925	1.341
Baldwin-Whitehall SD	2015	14	$56,760,813	4,152	$13,671	$5,833,509	395	$14,768	1.080
Beaver Area SD	2019	1	$30,096,723	2,015	$14,936	$3,314,383	275	$12,052	0.807
Belle Vernon Area SD	2015	5	$33,171,038	2,551	$13,003	$4,736,788	374	$12,665	0.974
Bentworth SD	2015	3	$14,435,587	1,171	$12,328	$2,044,208	182	$11,232	0.911
Bethel Park SD	2020	27	$77,768,523	4,037	$19,264	$12,028,337	707	$17,013	0.883
Bethlehem-Center SD	2019	7	$21,073,523	1,166	$18,073	$3,874,820	278	$13,938	0.771
Big Beaver Falls Area SD	2020	1	$28,082,718	1,664	$16,877	$4,075,814	343	$11,883	0.704
Blackhawk SD	2018	27	$32,840,760	2,365	$13,886	$4,434,007	365	$12,148	0.875
Brentwood Borough SD	2019	11	$21,783,806	1,228	$17,739	$3,368,895	202	$16,678	0.940
Burgettstown Area SD	2018	11	$17,983,789	1,118	$16,086	$2,858,530	227	$12,593	0.783

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
Burrell SD	2019	18	$27,510,811	1,812	$15,183	$2,754,126	298	$9,242	0.609
Butler Area SD	2018	2	$93,574,218	6,472	$14,458	$16,267,879	1,157	$14,060	0.972
California Area SD	2019	13	$14,232,271	857	$16,607	$2,312,998	161	$14,366	0.865
Canon-McMillan SD	2018	8	$69,506,874	5,312	$13,085	$10,766,740	790	$13,629	1.042
Carlynton SD	2020	13	$27,543,315	1,369	$20,119	$4,064,057	254	$16,000	0.795
Central Valley SD	2015	1	$30,972,856	2,397	$12,922	$3,416,146	241	$14,175	1.097
Charleroi SD	2017	35	$20,637,703	1,525	$13,533	$3,332,568	253	$13,172	0.973
Chartiers Valley SD	2019	15	$60,692,748	3,288	$18,459	$7,901,855	390	$20,261	1.098
Chartiers-Houston SD	2017	31	$15,763,049	1,113	$14,163	$1,793,000	197	$9,102	0.643
Clairton City SD	2020	17	$16,921,865	747	$22,653	$2,737,045	215	$12,730	0.562
Cornell SD	2018	4	$13,556,640	598	$22,670	$1,956,661	143	$13,683	0.604
Deer Lakes SD	2019	38	$33,473,666	1,891	$17,702	$4,937,273	360	$13,715	0.775
Derry Area SD	2020	16	$32,906,996	1,924	$17,103	$5,249,342	349	$15,041	0.879
Duquesne City SD	2016	12	$15,756,641	312	$50,502	$2,625,848	84	$31,260	0.619
East Allegheny SD	2018	19	$30,624,808	1,553	$19,720	$5,379,555	322	$16,707	0.847
Elizabeth Forward SD	2016	10	$35,414,758	2,370	$14,943	$4,798,252	419	$11,452	0.766
Fort Cherry SD	2017	10	$17,588,388	1,038	$16,944	$2,614,158	198	$13,203	0.779
Fox Chapel Area SD	2016	12	$84,747,299	4,186	$20,245	$11,322,432	460	$24,614	1.216

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
Franklin Regional SD	2016	5	$48,469,988	3,497	$13,860	$5,153,994	465	$11,084	0.800
Freedom Area SD	2017	1	$20,259,666	1,385	$14,628	$2,892,304	232	$12,467	0.852
Gateway SD	2017	14	$66,208,180	3,350	$19,764	$12,647,541	630	$20,075	1.016
Greater Latrobe SD	2020	11	$51,703,620	3,672	$14,081	$7,045,425	569	$12,382	0.879
Greensburg Salem SD	2019	10	$43,313,655	2,737	$15,825	$7,802,231	512	$15,239	0.963
Hampton Township SD	2016	7	$41,770,901	2,916	$14,325	$3,457,172	204	$16,947	1.183
Hempfield Area SD	2019	21	$86,727,910	6,964	$12,454	$12,411,926	1,234	$10,058	0.808
Highlands SD	2018	20	$42,661,219	2,509	$17,003	$8,523,987	540	$15,785	0.928
Hopewell Area SD	2018	1	$36,671,785	2,100	$17,463	$6,017,288	339	$17,750	1.016
Jeannette City SD	2018	26	$16,822,710	1,026	$16,396	$2,810,689	209	$13,448	0.820
Karns City Area SD	2020	1	$22,864,969	1,351	$16,924	$1,716,614	230	$7,464	0.441
Keystone Oaks SD	2016	11	$34,602,790	1,887	$18,337	$4,809,305	255	$18,860	1.028
Kiski Area SD	2018	16	$52,198,590	3,662	$14,254	$6,813,028	554	$12,298	0.863
Ligonier Valley SD	2020	17	$27,727,994	1,515	$18,302	$3,909,086	273	$14,319	0.782
Mars Area SD	2017	26	$39,502,482	3,324	$11,884	$4,385,434	326	$13,452	1.132
McGuffey SD	2012	3	$26,080,974	1,918	$13,598	$3,499,621	293	$11,944	0.878
McKeesport Area SD	2019	16	$55,768,984	3,244	$17,191	$9,582,911	776	$12,349	0.718
Monessen City SD	2019	51	$14,727,787	722	$20,399	$1,969,797	109	$18,072	0.886

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
Moniteau SD	2015	3	$17,641,092	1,309	$13,477	$2,274,826	189	$12,036	0.893
Montour SD	2015	29	$53,140,765	2,793	$19,026	$6,874,441	289	$23,787	1.250
Moon Area SD	2017	15	$63,279,813	3,758	$16,839	$9,513,484	515	$18,473	1.097
Mount Pleasant Area SD	2018	10	$30,091,923	2,062	$14,594	$4,214,508	354	$11,905	0.816
Mt Lebanon SD	2019	10	$87,379,823	5,522	$15,824	$9,144,757	680	$13,448	0.850
New Brighton Area SD	2018	2	$21,956,186	1,386	$15,841	$2,865,633	220	$13,026	0.822
New Kensington-Arnold SD	2020	30	$33,963,178	1,934	$17,561	$8,286,222	471	$17,593	1.002
North Allegheny SD	2020	5	$156,333,137	8,631	$18,113	$22,633,613	1,045	$21,659	1.196
North Hills SD	2017	15	$67,063,396	4,385	$15,294	$9,071,575	616	$14,727	0.963
Northgate SD	2020	3	$23,356,272	1,060	$22,034	$3,460,305	231	$14,980	0.680
Norwin SD	2015	10	$56,600,367	5,252	$10,777	$6,040,081	594	$10,168	0.944
Penn Hills SD	2019	60	$78,691,345	3,350	$23,490	$14,065,293	821	$17,132	0.729
Penn-Trafford SD	2019	11	$52,555,501	3,838	$13,693	$5,087,105	430	$11,830	0.864
Peters Township SD	2017	7	$54,849,622	4,108	$13,352	$6,599,386	465	$14,192	1.063
Pine-Richland SD	2019	3	$73,406,918	4,617	$15,899	$11,274,949	659	$17,109	1.076
Pittsburgh SD	2015	34	$541,791,186	23,227	$23,326	$80,103,641	4,092	$19,576	0.839
Plum Borough SD	2018	6	$56,988,540	3,747	$15,209	$6,587,644	541	$12,177	0.801
Quaker Valley SD	2016	23	$37,142,868	1,882	$19,736	$4,644,550	238	$19,515	0.989

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
Ringgold SD	2015	14	$35,613,611	2,986	$11,927	$4,684,728	470	$9,968	0.836
Riverside Beaver County SD	2019	1	$22,742,621	1,447	$15,717	$3,343,088	249	$13,426	0.854
Riverview SD	2018	15	$20,576,093	982	$20,953	$2,338,413	166	$14,087	0.672
Rochester Area SD	2017	12	$15,066,545	699	$21,554	$3,177,873	173	$18,369	0.852
Seneca Valley SD	2017	1	$107,859,932	7,184	$15,014	$17,936,810	1,188	$15,098	1.006
Shaler Area SD	2015	23	$71,108,626	4,614	$15,411	$11,800,662	815	$14,479	0.940
Slippery Rock Area SD	2018	5	$30,046,607	1,948	$15,424	$5,658,720	339	$16,692	1.082
South Allegheny SD	2016	37	$21,785,055	1,521	$14,323	$3,964,127	320	$12,388	0.865
South Butler County SD	2018	3	$33,083,770	2,278	$14,523	$3,577,269	287	$12,464	0.858
South Fayette Township SD	2016	7	$41,089,063	3,022	$13,597	$4,487,264	254	$17,666	1.299
South Park SD	2017	9	$27,033,851	1,823	$14,829	$3,360,594	174	$19,314	1.302
South Side Area SD	2015	4	$20,591,033	1,119	$18,401	$2,294,585	113	$20,306	1.104
Southmoreland SD	2020	11	$26,847,303	1,905	$14,093	$3,851,527	310	$12,424	0.882
Steel Valley SD	2020	11	$36,546,017	1,359	$26,892	$8,484,519	371	$22,869	0.850
Sto-Rox SD	2020	21	$28,691,561	1,268	$22,627	$6,595,985	279	$23,642	1.045
Trinity Area SD	2017	22	$49,610,918	3,176	$15,621	$8,193,890	544	$15,062	0.964
Upper Saint Clair SD	2018	3	$70,411,647	4,046	$17,403	$9,202,851	520	$17,698	1.017
Washington SD	2017	16	$23,887,797	1,493	$16,000	$3,838,890	265	$14,486	0.905

School	CMCI Year	Number of Areas of Noncompliance	Total Expenditures	Total Number of Students	Cost per Student	Special Education Expenditures	Number of Special Education Students	Cost Per Special Education Student	Weighted Cost
West Allegheny SD	2019	8	$54,054,479	3,349	$16,140	$6,131,880	468	$13,102	0.812
West Jefferson Hills SD	2016	5	$39,237,788	2,885	$13,601	$4,011,293	246	$16,306	1.199
West Mifflin Area SD	2019	27	$48,883,603	2,721	$17,965	$8,732,898	647	$13,498	0.751
Western Beaver County SD	2019	1	$13,425,036	749	$17,924	$2,130,080	152	$14,014	0.782
Wilkinsburg Borough SD	2018	40	$28,155,833	512	$54,992	$5,434,149	181	$30,023	0.546
Woodland Hills SD	2015	22	$78,945,563	3,910	$20,191	$17,588,158	869	$20,240	1.002
Yough SD	2019	6	$30,774,342	1,916	$16,062	$3,851,691	387	$9,953	0.620

The “Number of Areas of Noncompliance” column on in Table 2 pulled information from the Pennsylvania Department of Education (2021b) Cyclical Monitoring site. I reviewed the information individually for each district and counted each area of noncompliance. Additionally, the year that the CMCI was conducted is listed in the “CMCI Year” column. The “Total Expenditures” and “Special Education Expenditures” columns were pulled from the Pennsylvania Department of Education (2021c) Expenditure Data site and were recorded accordingly in Table 2. The columns for “Total Number of Students” and “Number of Special Education Students” were found through the Pennsylvania Department of Education (2021e) for each individual district for the year prior to CMCI. This was the same year for the expenditure data included in Table 2. I determined the cost per student and the cost per special education student by dividing the “Total Expenditures” column by the total number of students and the cost per special education student and dividing the special education expenditures by the number of special education students. Finally, the “Weighted Cost” column was calculated by dividing the special education cost per student by the cost per student.

Additionally, the columns “Number of Areas of Noncompliance,” “Cost per Student,” “Cost per Special Education Student,” and “Weighted Cost” were compiled to determine the average, standard deviation, low range, and high range for each column. That data can be found in Table 3. Based upon the data collected from the 94 school districts, the average district has a Weighted Cost of 0.902 and about 14 areas of noncompliance on their last CMCI.

Table 3

General Data from Population

	Number of Areas of Noncompliance	Cost per Student	Cost Per Special Education Student	Weighted Cost
Mean	14.181	$17,510	$15,448	0.902
Standard deviation	11.753	$6,067	$4,292	0.178
Low range	2.428	$11,443	$11,156	0.724
High range	25.934	$23,577	$19,740	1.08

Research Question 1

The first research question asked, "What percentage of schools in the sample population are spending at the 2007 costing out study for Pennsylvania's recommended weight cost of 1.3 times the cost per student?" A review of the "Weighted Column" in Table 2 indicated that only two out of 94 districts, Avonworth and South Park, have a weighted cost of 1.3 or higher—which is approximately 2.13%. While the sample population is not representative of the entire state of Pennsylvania, it represents nearly one-fifth of public school districts in Pennsylvania. The percentage of schools in the sample size that meet the recommended weighted cost recommendation is exceptionally low.

Research Question 2

To answer the second research question, I reviewed the data to determine whether the districts that met the weighted cost of 1.3 for spending per pupil special education students were more likely to yield better results on CMCI. The two districts that met the recommended Weighted Cost calculation were Avonworth and South Park. Avonworth had one area of noncompliance on their last audit and South Park had nine—both of which were below the average of approximately 14 areas of noncompliance. The average between the two schools was

five areas of noncompliance. When examining the remaining 92 districts, their average number of areas of noncompliance was 14.38. When comparing the two groups, the schools that reached the recommended weighted cost had roughly one-third of the number of areas of noncompliance of the schools that did not meet the recommended weighted cost. Additionally, both schools fared better than the average of 14.181 areas of noncompliance.

Research Question 3

To answer the third research question, I sought to determine an association between special education expenditures, weighted costs, and percentage of special education students within the district. Multiple regression analyses were considered the most appropriate strategy for answering the third research question. The dependent and predictor variables were continuous variables. Prior to conducting the multiple regression model, all associated statistical assumption tests were conducted.

Statistical Assumption Tests

I examined the assumption of normality in the distribution of the data by determining the skewness and kurtosis of all the predictors and the dependent variable. The results of this analysis are provided in Table 4.

Table 4

Basic Descriptive Statistics

Variable	Mean	Sd	Skewness	Kurtosis
CMCI Non-Compliance	14.09	1.72	1.31	2.10
Special Education Expenditures	$6,767,025	$8,621,450	6.87	57.20
% SPED Students	0.17	0.05	0.67	1.22
Weighted Cost	0.90	0.18	0.10	0.10

As indicated in Table 4, the variables all present normal levels of skewness (within |2.0|) and kurtosis (within |5.0|), except for the special education expenditures. After further examination of the data, it was evident that the Pittsburgh School Districts expenditures were approximately 4 times more than most of the school districts expenditures in the study, and the decision was made to retest the assumption of normality without that school district in the data set. The results are presented in Table 5.

Table 5

Basic Descriptive Statistics After Removing Pittsburgh School District

	Mean	Sd	Skewness	Kurtosis
CMCI Non-Compliance	13.97	11.63	1.36	2.37
Special Education Expenditures	$5,978,460	$4,006,169	1.72	3.43
% SPED Students	0.17	0.05	0.67	1.18
Weighted Cost	0.90	0.18	0.08	0.07

I then determined the assumption of normality to be tenable. Next, I examined the assumption of linearity using curve estimation analyses. These results are presented in Table 6.

Table 6

Curve Estimation Analysis Results

Predictor Variable	Equation	Model Summary		
		R Square	F	Sig.
SPED Expenditures	Linear	0.01	0.419	0.519
	Quadratic	0.02	0.841	
% SPED Students	Linear	0.11	11.254	0.095
	Quadratic	0.12	5.958	
Weighted Costs	Linear	0.02	2.073	0.153
	Quadratic	0.03	1.171	

As indicated, no significant differences existed between the linear and quadratic curves; therefore, the assumption of linearity was tenable.

The assumption of the absence of multi-collinearity was examined by conducting a Variance Inflation Factor and a Tolerance test. The results indicated significant multi-collinearity among the predictor variables (VIF = 1.899; Tolerance = .527). After examining the variable via a correlation analysis, the weighted cost variable was eliminated from the analysis because of the strong negative correlation to special education expenditures (r = -.650). I conducted the Variance Inflation and Tolerance test a second time, and both equaled 1.0, therefore providing evidence that the assumption of the absence of multi-collinearity was tenable (Field, 2009). Finally, Mahalanobis Distance and standardized residual tests revealed no influential outliers in the final data set.

The model summary of the multiple regression model indicated that the current model, which includes special education expenditures and percentage of special education students in the district, significantly predicts the reported number of areas of noncompliance issues, F (2,90) = 5.82, p =.004, R = .338, R^2 = .114. The results of the coefficients indicated that special education expenditures is not a significant predictor of the number of areas of noncompliance reports (t = .668, p =.506) and that the percentage of special education students is a significant predictor (t = 3.34, p =.001) of the number of areas of noncompliance reports. The model is written as follows:

Non-Compliance = -.395 + .001 (Special Education Expenditures) + 77.8 (% of SPED students).

The details of the one-step model are indicated in Table 7.

Table 7

Results of Regression Model

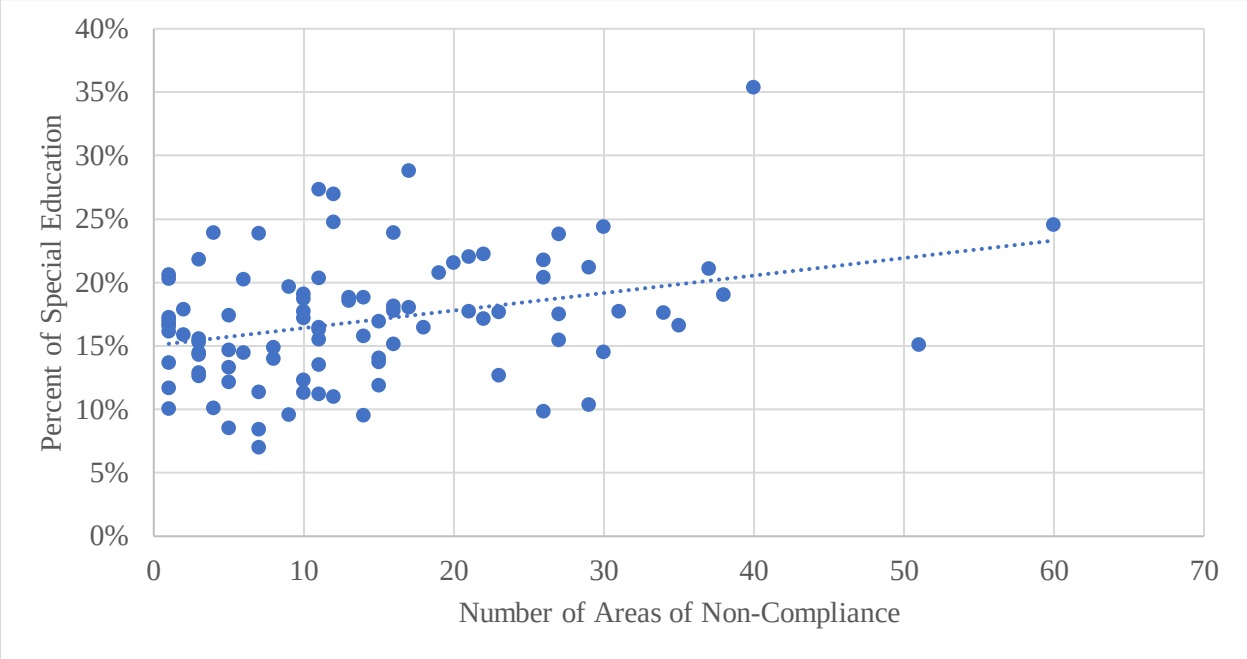
	B	SE	Beta	t	Sig.
(Constant)	-0.395	4.456		-0.089	0.93
Special education expenditures	.001	0.00	0.066	0.668	0.506
Percentage of SPED students	77.806	23.284	0.331	3.342	0.001

Note: $R^2 = .002$ ($p<0.001$).

While the results indicated a statistically significant model, the association between the combined predictor variable of special education expenditures and percentage of special education students was $r = -.338$, resulting in an explained variance of approximately 11.4%. This indicates that 11.4% of the number of areas of noncompliance reports can be explained or predicted using these two pieces of information. Figure 1 depicts the scatterplot points for each of the districts with the *x*-axis being represented by the number of areas of noncompliance and the percentage of special education students being represented on the *y*-axis. Additionally, I calculated and included a trend line to show the trend in the data.

Figure 1

Percent of Special Education Versus Number of Areas of Noncompliance



Summary

The current investigation examined whether the number of areas of noncompliance in a school district could be predicted by the special education expenditures, the percentage of special education students, and the weighted costs associated with special education spending. Initially, I sought to include 94 school districts in Pennsylvania; however, the test of statistical assumptions indicated that the Pittsburgh School District was an outlier regarding the special education expenditures. The resulting sample, therefore, included 93 school districts. Additional analyses revealed a strong correlation between the special education expenditures and weighted costs. The Variance Inflation analysis and Tolerance test suggested that this relationship was multi-collinear (i.e., these two variables explained the same variance in the model), and weighted costs were eliminated from the regression model. The regression model suggested that the relationship between the number of areas of noncompliance has a significantly moderate negative correlation

with both the number of special education expenditures and the percentage of special education students. The model can explain or predict 11.4% of the number of areas of noncompliance in a school district. I expand upon the results and the implication of this research in Chapter 5.

Chapter 5: Conclusions and Recommendations

In Chapter 5, I provide a synopsis of each chapter thus far, a report on the results of the data, the implications of the results of the data, and recommendations for future research. The research questions posed in previous chapters are reviewed, and the implications of the data are discussed. Additionally, I present recommendations for future research based upon the results.

Summary of the Study

The purpose of this study was to examine the financial implications associated with special education compliance. IDEA has many requirements for districts to follow and implement to ensure that students with disabilities are receiving a FAPE. Schools across the state of Pennsylvania try to balance meeting the needs of all students while also being conscience of their limited budget. In difficult financial situations, many districts must find ways to make ends meet while also meeting federal and state regulations. The dilemma is that while there is some funding for mandates like IDEA, it is frequently not enough to cover the entirety of the cost to meet the needs of all students. States are required to monitor districts on a cyclical basis to ensure that they are complying with the regulations of IDEA and the state.

The state of Pennsylvania investigated the costs associated with maintaining compliance through a costing out study in 2009. This study determined that in order to maintain compliance, districts needed to spend 1.3 times on special education students as they did for regular education students. In this study, which took place roughly 13 years after the costing out study, I also determine how many districts were reaching this requirement and whether the districts that did

fared better on their CMCI. The numbers show that IDEA only covers about 13% of the costs required to educate special education students. In Pennsylvania, that financial amount covers about 5% of the cost per special education.

In Chapter 1, I discussed the basic information associated with special education. I reviewed IDEA and the requirements it mandates to ensure that students with disabilities are receiving FAPE. I also discussed the problem of ensuring that compliance is met even when sufficient funding is not provided. This ties into the central problem, which was whether there is a correlation between special education spending and noncompliance on the CMCI. The other research questions were created to focus on the weighted cost recommendations from Augenblick et al. (2009) as well as associations between special education expenditures, weighted costs, and percentage of special education students on CMCI compliance. The answers to these questions may provide a starting point for districts support the need for more funding for special education funding.

In Chapter 2, I reviewed literature that was related to the current topic. The review of literature showed that a study similar to the present study has not yet been conducted. Therefore, information that was similar from other studies was used to provide some background. The review showed that other states have similarly completed costing out studies to determine appropriate levels of spending. Most have revealed that recommendations for special education spending levels fall between 1.0 and 1.5 times the cost of general education students, and Pennsylvania fell right in the middle at 1.3. Many researchers are calling for more funding for special education to meet compliance and the needs of the students. Students with disabilities require significantly more support and resources to be successful. Currently, research shows that

students with disabilities are still significantly underperforming compared to their nondisabled peers in academic assessments, graduation rates, and postsecondary employment.

In Chapter 3, I discussed the research methodology for the study. I provided demographic information on the five counties in which the school districts were located, as well as the steps in the data collection process. The AFR, CMCI results, and Penn Data were all pulled from public databases. The year of the CMCI dictated the year from which the AFR and Penn Data information was pulled, as I focused on the financial and student information for the year prior. The statistical analysis of multiple regression through SPSS was the most appropriate method to best address the questions at hand. Prior to utilizing the data, the data were reviewed through Curve Estimation Analysis and Mahalanobis Distance to determine whether the data were tenable. Ultimately, Pittsburgh School District was found to have a significant outlier that was impacting the model and was therefore removed from the research analysis. Once this district was pulled from the research analysis, the data were found to be within acceptable levels of kurtosis and skewness.

Report of the Results

Chapter 4 included an analysis of the data to answer the questions and attempt to prove the hypothesis. An analysis of the data showed that only about 2% of the districts are spending 1.3 times as much money on special education students as they do for regular education students. Further, the districts that did spend the recommended amount of 1.3 performed better on the audit than those that did not meet that mark. Additionally, it was found that special education expenditures were not a significant predictor of noncompliance, but the percentage of special education students was a significant predictor as to the number of areas of noncompliance.

Based upon the results from the data analysis, the null-hypothesis that spending levels have no association on compliance was supported. Despite this, the research questions did yield some important information results. For the first research question, I found that only 2.13% are at that level. This led into the second question, which focused on the performance of those schools that did meet the recommended weighted cost compared to those that did not. Table 3 showed that, on average, the districts that were reviewed had 14.181 areas of noncompliance on their CMCI. South Park School District and Avonworth School District were the only districts that met or exceeded that recommended weighted cost of 1.3. South Park had nine areas of noncompliance, and Avonworth had one area of noncompliance. Based upon the data, the districts that do meet the spending levels are likely to perform better on the CMCI. Additionally, I found that the percentage of special education students was a predictive outcome to the number of areas of noncompliance. This means that the higher the percentage of special education students, the more likely it is that a district will have a higher number of areas of noncompliance.

Implications of the Results

In this study, the findings proved the null-hypothesis that funding does not have a significant correlative impact on compliance. There are, however, some key takeaways from the research question that warrant a closer look. Based upon a costing out study completed by a consulting firm and funded by the state, it was recommended that school districts should spend 1.3 times as much per special education student as they did for all students in order to maintain compliance with IDEA. The data from this study revealed that few schools districts are meeting this recommended level of spending. While this study did not examine every school district within the state, it is worth noting that the districts represented nearly one-fifth of the public school districts in the state, and the number that met this criteria was low. Based upon the data, it

may be implied that a significant number of districts across the state are not reaching the recommended weighted cost.

The data also allowed me to compare the number of areas of noncompliance between the schools that met the weighted cost recommendation and those that did not. This review found that the districts that met the recommended level averaged five areas of noncompliance compared to the 14.38 areas of noncompliance from those that did not. The number of districts that met the level was low; however, the small number that did meet this level saw nearly one-third of the number of areas of noncompliance on their CMCI.

Table 2 depicts the number of areas of noncompliance and spending information for each district. It is worth mentioning that none of the districts that were observed were 100% compliant, meaning that their CMCI yielded zero areas of noncompliance. This is likely due to the extensive nature of the CMCI and the random approach to files and because the issue does not need to be systemic for it to be an area of noncompliance, as it only takes one minor issue found in one file to result in an area of noncompliance. Therefore, it is difficult for a district to complete a CMCI with 100% compliance. It is important to remember that the process is intended for continuous improvement to help ensure districts are meeting the needs of students. Therefore, districts that exhibit a few areas of noncompliance should not necessarily be looking at major overhauls or drastic changes.

Despite the fact that it is unlikely for a district to have a perfect CMCI, there are still some concerns with the overall average for non-compliance. Table 3 depicted the mean for noncompliance within the districts as well as the standard deviation. The mean for all 94 districts was over 14 areas of noncompliance. While it may be highly unlikely that a district has zero areas of noncompliance, 14 still seems to be a higher than one might hold to be acceptable as an

average. The standard deviation of roughly 11 does indicate that there is a lot of variance between districts in non-compliance, which can render the mean higher than it should be. For example, Penn Hills had 60 areas of noncompliance, which is over four times higher than the mean of all districts in the sample population.

In this study, Pittsburgh School District was removed from the regression model due to the impact it had on the kurtosis. When Pittsburgh was included in the analysis, it extended the kurtosis level beyond an acceptable level. Pittsburgh's total expenditures ($541,791,186) was higher than combined total of the next five highest districts in the same category (i.e., North Allegheny, Seneca Valley, Butler Area, Mount Lebanon, and Hempfield). Similarly, the special education expenditures were significantly higher ($80,103,641) than the combined total of the next four districts in the same category (i.e., North Allegheny, Seneca Valley, Woodlawn Hills, and Butler Area). Due to the significant difference, keeping Pittsburgh in the regression model would have pulled the special education expenditures significantly beyond the acceptable level of kurtosis.

Additionally, a district with a high number of areas of noncompliance cannot necessarily spend their way out of that situation. If the district was found to be lacking in the area of postsecondary transition, increasing overall spending levels does not necessarily indicate that they are addressing the area of need—in this case, postsecondary transition. In order to continuously improve the areas that are found to be noncompliant, the spending needs to be targeted on those areas to provide the appropriate supports and services. Unfortunately, overall special education spending is broad, and the research to determine whether the funding is allotted to areas of noncompliance cannot be gleaned from special education spending alone.

The major finding from this study was the link between special education population and areas of noncompliance. The analysis of the data revealed that the percentage of special education students is a significant predictor of areas of noncompliance. Figure 1 depicts the data on a scatter plot. The data indicate that a higher percentage of special education students is likely to predict a higher level of noncompliance on the CMCI.

Recommendations for Future Research

While a significant link between special education spending and compliance was not found, the results indicate that there are some key areas to examine in future research regarding special education spending and compliance. It has been roughly 13 years since Augenblick et al. (2009) completed their costing out study in the state of Pennsylvania. The state and school districts have had roughly 13 years to examine the results of that study, and yet only about 2% of the schools in this study were found to meet the level of spending to ensure compliance with IDEA was being met. To answer the second research question, I compared the results of the CMCI between those that met or exceeded the 1.3 weighted cost and those that did not. The number of schools that met the level was found to be low, but the comparison does show more favorable results on the CMCI for those that met the level.

Future research may examine this level in more depth. With only two schools in the sample being found to meet the recommendation, this number is not large enough to reveal a meaningful representation. Future studies could focus the data collection on all school districts statewide. From there, the same data could be collected on compliance and spending for all 500 schools. The weighted cost could be calculated for each school with the data being organized into two groups—those that meet or exceed the 1.3 weighted cost and those that do not. With a larger population size, a quantitative analysis could be conducted using an Analysis of Variance

(ANOVA) to determine whether there is a statistical significance between the two groups. With only two districts meeting the spending level within this study, the degrees of freedom (n-1) would have been too small in the group that met the recommended level to run a study, as 2-1 would have yielded a degree of freedom of 1. The sample size of 94 schools in this study only represent approximately 20% of the state, so a larger scale study may glean a much more reasonable calculation. Such a study would reveal whether the weighted cost supports the recommendation from Augenblick et al. (2009).

Similarly, future research may conduct a similar study on a larger scale. If the same data were collected on all Pennsylvania schools, this study could be run on a much larger scale to determine if the findings within the sample population are an accurate representation of the data compared to the entire state of Pennsylvania. This may alter the model summary found within the sample population in Chapter 4. In a statewide study, it is likely that a school district such as Philadelphia will need to be removed, similarly to how Pittsburgh was removed in this study. This is due to the large number of schools and spending compared to other districts and the effective this has on the kurtosis.

Another option for future research is to further explore the Model Summary found in Chapter 4 (Noncompliance = -.395 + .001 [Special Education Expenditures] + 77.8 [% of SPED students]). Within the study, the R^2 = .114 meant that the Model Summary was able to explain or predict 11.4% of the areas of noncompliance in a school district's CMCI. Therefore, future studies could examine other factors that may contribute to noncompliance to improve the R^2. The percentage of special education students was a strong predictor, but socio-economic status may be another factor that could be examined by examining a district's percentage of students receiving free and reduced lunch. These data are likely to be available online. Future research

could also examine factors such as teacher and/or administration turnover. These factors may impact compliance, but it may be more difficult to collect the data, as they are not readily available online. This means that a researcher would need to collect this data by corresponding wiht school districts, and that districts would have to be willing to comply with providing the information. Additionally, the researcher would need to establish a method of measurement in looking at turnover.

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Appendix A

SRU IRB Application

SlipperyRock University

IRB Office Use: Protocol #

SLIPPERY ROCK UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS

RESEARCH PROTOCOL APPLICATION FORM

For information or help, contact the IRB Office

Phone: 724-738-4846 **e-mail: irb@sru.edu**

1. Proposed Start Date of Study: 1/18/2022 **Proposed End Date of Study:** 12/16/2022

*Note: project cannot begin until IRB approval has been obtained

2. Proposed Review Category (check one): ☐ Full Board ? ☐ Expedited ? ☒ Exempt ? Category #

3. Level of risk to participants: ☒ No Risk ☐ Minimal Risk ☐ More than Minimal Risk

4. Please identify ALL risks that participants might encounter in this research.

☐ Breach of Confidentiality ☐ Deception ☐ Psychological ☐ Coercion ☐ Physical ☐ Social

☐ Other

5. Project Title: A Correlative Analysis on Special Education Spending and the CMCI Results on Southwestern PA School Districts

6. Principal Investigator: Joe Merhaut **Title:** Dr **Dept:** Special Education

Phone: 724-822-0815 **SRU e-mail:** Joseph.Merhaut@sru.edu **Dept. Address:** 105 Maltby Ave, Rm 202, Slippery Rock, PA 16057

Fax: **Alternate e-mail:**

7. Source of funding support: ☒ Not Applicable ☐ Internal ☐ External Agency: ☐ Pending

8. Do you have any relationship to the sponsor of the study or the company of the product that you are investigating that would be considered a conflict of interest as defined in the Conflict of Interest Policy? ☐ Yes ☒ No

9. Will this study involve any outside entity/individual that is not an investigator? ☐ Yes ☒ No

If yes, please list:

GENERAL RESEARCH PROJECT CHARACTERISTICS

10A. Mandatory CITI Training

Names of ALL investigators:	Completed CITI training? Yes*	No**
Principal Investigator: Dr. Joe Merhaut	☒	☐
Co-Investigator(s): Justin Karam	☒	☐
	☐	☐
Research Assistant(s):	☐	☐
	☐	☐

* Certificate of completion must be attached

** Approval will not be given until CITI has been completed by all investigators

Co-investigators are key personnel who have responsibilities similar to that of the PI. While the PI has ultimate responsibility for the conduct of a research project, the co-investigator(s) is also obligated to ensure the project is conducted in compliance with applicable laws and regulations and institutional policy governing the conduct of sponsored research. Research Assistants are individuals who are involved on the project, but are not crucial to conducting the research. For example, they can assist in collection and input of data into a database or serve as an aide to the investigators. However, they cannot consent or enroll participants in research projects that are more than minimal risk. Research Assistants are required to complete the CITI Online Training Program

10B. Participant Information

Please check ALL descriptors that apply to the participant population.

☐ Males Only ☐ Females Only

Vulnerable Populations

☐ Prisoners

☐ Children and/or Adolescents (under age 18)

Persons with Potential for Coercion:

☐ Individuals with impaired-decision-making ability

☐ SRU students

Do you plan to compensate your participants? ☐ Yes ☒ No

10C. Research Methodology

Please check ALL descriptors that best apply to the research methodology.

Data Source(s): ☐ New Data ☒ Existing Data

Will data be recorded so that participants can be directly or indirectly identified? ☐ Yes ☒ No

Data collection will involve the use of: (please check ALL that apply)

☐ Normal Education Practices

☐ Educational Tests (cognitive diagnostic, aptitude, etc.)

☐ Surveys/Questionnaires

☐ Audio/Video/Photos

☐ Interview

☐ Observation

☐ Private records or files

For use effective August 2021

☐ Internet/electronic ☐ Physical/Physiological Measures or Specimens

11. PROJECT ASSURANCES

Project Title:

A. INVESTIGATORS' ASSURANCES

1. I certify that all information provided in this application is complete and correct.
2. I understand that, as an investigator, I am responsible for the conduct of this study, the ethical performance of this project, the protection of the rights and welfare of human subjects and strict adherence to any stipulations imposed by the Slippery Rock University IRB.
3. I certify that all individuals involved with the conduct of this project are qualified to carry out their specified roles and responsibilities and are in compliance with Slippery Rock University policies regarding the collection and analysis of the research data.
4. I agree to comply with all Slippery Rock University policies and procedures, as well as with all applicable federal, state and local laws regarding the protection of human subjects, including, but not limited to the following:
   a. Conducting the project by qualified personnel according to the approved protocol
   b. Implementing no changes in the approved protocol or consent form without prior approval from the IRB
   c. Obtaining the legally effective informed consent from each participant or their legally responsible representative prior to their participation in this project using only the currently approved, stamped consent form
   d. Promptly reporting significant adverse events and/or effects to the IRB in writing within 5 working days of the occurrence.
5. If I will be unavailable to direct this research personally, I will arrange for a co-investigator to assume direct responsibility in my absence. This person has been named as co-investigator in this application, or I will advise the IRB, by letter, in advance of such arrangements. I understand that a student cannot act as a Principal Investigator at any time.
6. I agree to conduct this study only during the period approved by the Slippery Rock University IRB.
7. I will prepare and submit a request for continuation and supply all supporting documents to the IRB before the approval period has expired if it is necessary to continue the research project beyond the time period approved by the Slippery Rock University IRB.
8. I will prepare and submit a final report upon completion of this research project.

My signature indicates that I have read, understand and agree to conduct this research project in accordance with the assurances listed above.

Dr. Joe Merhaut **Printed name of Principal Investigator**	**Principal Investigator's Signature**	1/4/2022 **Date**
Justin Karam **Printed name of Co-Investigator**	**Co-Investigator's Signature**	1/4/2022 **Date**
Printed name of Co-Investigator	**Co-Investigator's Signature**	**Date**
Printed name of Co-Investigator	**Co-Investigator's Signature**	**Date**
Printed name of Co-Investigator	**Co-Investigator's Signature**	**Date**
Printed name of Research Assistant	**Research Assistant's Signature**	**Date**
Printed name of Research Assistant	**Research Assistant's Signature**	**Date**
Printed name of Research Assistant	**Research Assistant's Signature**	**Date**

***If more space is needed, please attach a second signature page.**

****If submitting electronically, please print the first two pages, obtain signatures and send to the IRB Office at 008 Old Main.**

12. PURPOSE

a. **Clearly state all of the objectives, goals or aims of this project.**

The research is for a dissertation in the special education doctoral program for Justin Karam. It is aimed at identifying if a correlation exists between the special education spending levels of school districts and their performance on the Cyclical Monitoring for Continuous Improvement (CMCI), commonly referred to as the special education audit. The audit is in place to monitor districts on their compliance with Chapter 14 of the Pennsylvania school code, which aligns to the federal requirements of the Individuals with Disabilties Education Act (IDEA).

b. How will the results of this project be used? Include all intended uses (e.g., Presentation? Publication? Thesis? Dissertation? Quality Improvement?)

The initial results will be used in Justin's dissertation. It may be used for publication following a successful defense.

13. LOCATION OF RESEARCH ☒ **SRU Campus** ☐ **Off-Campus** ☐ **Both**
For off-campus, list all locations where the data collection will take place. Be as specific as possible. Permission letters must be attached for off-campus locations such as school districts, organizations, businesses, Physician's Offices, etc.

The data utilized is all public record. The CMCI results for each district are available on Pennsyvlania Department of Educations website. Similarly, the spending is listed in the Annual Financial Report (AFR) which is submitted each year and also posted publicly. This data will be pulled and compiled into SPSS and ran through a Pearson correlation.

14. PARTICIPANTS

a. Describe the participant population you have chosen for this project.
(If data are existing, check here ☒ and describe the population from whom data were collected.)

The data utilized is all public record. The CMCI results for each district are available on Pennsyvlania Department of Educations website. Similarly, the spending is listed in the Annual Financial Report (AFR) which is submitted each year and also posted publicly. This data will be pulled and compiled into SPSS and ran through a Pearson correlation.

If using existing data:
What is the minimum number of records that need to be accessed for you to validate the study? 95
What is the maximum number of records you wish to access? 95
***You may not access more records than the maximum number without prior approval from the IRB.**

b. Describe why this participant population is appropriate for inclusion in this research project. (Include inclusion and exclusion criteria for participant selection.)

The study will focus on 5 counties in southwestern Pennsylvania (Beaver, Butler, Allegheny, Westmoreland, and Washington), which hold 95 public school districts.

c. Describe in numbered steps all procedures you will use to recruit participants (i.e., Step 1, etc.). *Include a copy of all e-mails, flyers, advertisements, recruiting scripts, invitations, etc., that will be used to invite people to participate.*

N/A

If collecting new data:
What is the minimum number of participants you need to validate the study?
What is the maximum number of participants you wish to enroll?
***You may not enroll more participants than the maximum number without prior approval from the IRB.**

d. Describe the type, amount and method of compensation and/or incentives for participants.
(If no compensation will be given, check here ☒.)

Select the type of compensation: ☐ Monetary ☐ Incentives
☐ Raffle or Drawing incentive (Include the chances of winning.)
☐ Extra Credit (It is against the policy of the IRB at SRU to allow extra credit to be given to students in a class for participating in research unless an equal inducement is offered for an assignment of equal burden. If such a plan is made, it must be reviewed and approved by the IRB.)
☐ Other

Description:

15. PROJECT DESIGN & METHODS

a. **Describe in numbered steps all procedures and methods that will be used to consent participants (i.e., Step 1, etc.).**
☒ Check here if this is "not applicable"; you are using existing data.

b. **Describe the procedures you will use in order to address your purpose. Provide in numbered steps a description of how you will carry out this research project (i.e., Step 1, etc.).** Include specific information about the participants' time and effort commitment. (NOTE: Use language that would be understandable to someone who is not familiar with your area of study. Without a complete description of all procedures, the Slippery Rock University IRB will not be able to review this protocol. If additional space is needed for this section, please attach extra pages after page 6 of this form.)

c. **List all data collection instruments used in this project.** (e.g. surveys and questionnaires in the format that will be presented to participants, educational tests, data collection sheets, interview questions, audio/video taping methods etc.)

d. **Data analysis: Explain how the data will be analyzed.**

16. RISKS & DISCOMFORTS: List and describe all of the risks that participants might encounter in this research. ***If you are using deception in this study, please justify the use of deception and describe the debriefing procedures you plan to use.***

There are no risks as the study is utilizing already existing data.

17. PRECAUTIONS: Identify and describe all precautions you have taken to eliminate or reduce risks as listed in #16. If the participants can be classified as a "vulnerable" population, please describe additional safeguards that you will use to assure the ethical treatment of these individuals.

N/A

If using the Internet to collect data, what confidentiality or security precautions are in place to protect (or not collect) identifiable data? Include protections used during both the collection and transfer of data.
(These are likely listed on the server's website.)

The information on the website already lists districts names. No confidential information will be collected or used in this study.

18. BENEFITS

a. **List all realistic direct benefits participants can expect by participating in this specific study.**
(Do not include "compensation" listed in #14d.) Check here if there are no direct benefits to participants. ☒

N/A

b. **List all realistic benefits for the general population that may be generated from this study.**

The hypothesis is that a negative correlation between spending and performance on the CMCI (related to compliance with IDEA). If this is found to be accurate, future research could look at such things as determining causation, looking on a state or national scale, determining what levels of spending lead to a higher likelihood of compliance, etc.

19. PROTECTION OF DATA

a. **Will data be collected as anonymous?** ☐ **Yes** ☒ **No** **If "YES", skip to part "e".**
("Anonymous" means that you will not collect any identifiable data and there is no reasonable way to identify or match data to individual participants.)

- OR -

b. **Will data be collected as confidential?** ☐ **Yes** ☒ **No**
("Confidential" means that you will collect and protect identifiable data)

c. **If data are collected as confidential, will the participants' data be coded or linked to identifying information?**
☐ Yes (If so, describe how linked.) ☒ No

d. **Justify your need to code participants' data or link the data with identifying information.**

The information provided is public knowledge of state funded institutions. There will be nothing collected as part of the study that is confidential or personal to any person or entity.

e. **Describe how and where the data will be stored** (e.g. hard copy, audio cassette, electronic data, etc.), **and how the location where data is stored will be secured in your absence. For electronic data, describe security. If applicable, state specifically where any IRB-approved and participant-signed consent documents will be kept on campus for 3 years after the study ends.**

Electronically on a local hard drive on Justin's computer that is password protected in his house which is locked and has a security camera.

f. **Who will have access to participants' data?**

Justin and the dissertation committee members will have access to the organized data. The source of the initial data is online and viewable by anyone with internet access.

g. **When is the latest date that confidential data will be retained?** (Check here if only anonymous data will be retained ☐)

No confidential data will be obtained in the study.

h. **How will the confidential data be destroyed?** (NOTE: Data recorded and analyzed as "anonymous" may be retained indefinitely.)

No confidential data will be obtained in the study.

20. **QUALIFICATIONS OF INVESTIGATORS: Include a brief summary that includes the investigators relevant prior experiences, qualifications and/or credentials as related to the research protocol**

a. **Principal Investigator:**
Dr. Joe Merhaut: Associate Professor at SRU

b. **Co-Investigator(s):**
Justin Karam: Doctoral Candidate at SRU

c. **Research Assistant(s):**

PROTOCOL REVIEW CHECKLIST

All protocols must include:

1. ☐ Research Protocol Application Form (All signatures included and all sections completed)

Depending on the level of review you may or may not have any or all of the items below. Please check those that are included in this application.

2. ☐ **Informed Consent Documents**
   - ☐ Consent Form – to be used for adults 18 and older
   - ☐ Assent Form – to be used for minors under the age of 18
   - ☐ Parent/Guardian Form – to be used in addition to the assent form
   - ☐ Informational Letter – to be used when signatures are not necessary
   - ☐ Photo/Videotape/Audiotape Release Form – to be used when photographing/videotaping/audiotaping

3. ☐ **Appendix A,** "Reference List"

4. ☐ **Appendix B** if e-mails, flyers, advertisements, generalized announcements or scripts, etc., are used to recruit participants. Be sure to attach them in the order in which they are listed in #14c.

5. ☐ **Appendix C** if data collection sheets, surveys, tests, other recording instruments, interview scripts, etc. will be used for data collection. Be sure to attach them in the order in which they are listed in #15c.

6. ☐ **Appendix D** if you will be using a debriefing form or include emergency plans/procedures and medical referral lists (A referral list may be attached to the consent document).

7. ☐ **Appendix E** if research is being conducted at sites other than Slippery Rock University or in cooperation with other entities. A **permission letter** from the site / program director must be included indicating their cooperation or involvement in the project.

8. ☐ **Appendix F** if research being conducted is submitted under the exempt level of review, the appropriate exempt research category appendix form is required.

9. ☐ **Appendix G** if research being conducted is submitted using any type of consent forms, the informed consent checklist must be attached.

NOTE: If the proposed research is a multi-site project, involving investigators or participants at other academic institutions, hospitals or private research organizations, a letter of **IRB approval** from each entity is required prior to initiating the project.

Appendix B

SRU IRB Approval

Re: Karam IRB Application for Dissertation

irb <irb@sru.edu>
Tue 1/11/2022 3:48 PM
To: Karam, Justin S <justin.karam@sru.edu>
Cc: Merhaut, Joseph G. <joseph.merhaut@sru.edu>

Good Afternoon!

After reviewing your IRB Protocol with the IRB Chair, this protocol does not need to be reviewed/approved by the IRB since it is publicly available data. Thank you for checking in with our office to make sure.

Good luck on your research!
Casey

From: Karam, Justin S <justin.karam@sru.edu>
Sent: Thursday, January 6, 2022 9:05 AM
To: irb <irb@sru.edu>
Cc: Merhaut, Joseph G. <joseph.merhaut@sru.edu>
Subject: Karam IRB Application for Dissertation

Good morning,

My name is Justin Karam and I am a doctoral student in the special education program at SRU. I have attached my IRB application for the research portion of my dissertation. I also have my dissertation chair (Dr. Joe Merhaut) CCed on the email as well. Please let me know if you need anything else from me. Thank you for your time!

Justin Karam

Appendix C

SPSS Data Analysis: Correlations

		Number of Areas of Non-Compliance	Special Education Expenditures	% SPED	Weighted Cost
Pearson Correlation	Number of Areas of Non-Compliance	1.000	.068	.332	-.149
	SPED Expenditures	.068	1.000	.004	.323
	Percentage SPED	.332	.004	1.000	-.650
	Weighted Cost	-.149	.323	-.650	1.000
Sig. (1-tailed)	Number of Areas of Non-Compliance	.	.260	.001	.077
	Special Education Expenditures	.260	.	.484	.001
	Percentage SPED	.001	.484	.	.000
	Weighted Cost	.077	.001	.000	.
N	Number of Areas of Non-Compliance	93	93	93	93
	Special Education Expenditures	93	93	93	93
	Percentage SPED	93	93	93	93
	Weighted Cost	93	93	93	93

Appendix D

SPSS Data Analysis: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		**Collinearity Statistics**	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	**Tolerance**	**VIF**
1	(Constant)	-7.877	12.276		-.642	.523	-32.268	16.514		
	Special Education Expenditures	1.028E-7	.000	.035	.321	.749	.000	.000	**.816**	**1.225**
	Percentage SPED	92.296	32.185	.393	2.868	.005	28.346	156.247	**.527**	**1.899**
	Weighted Cost	6.158	9.410	.095	.654	.515	-12.539	24.856	**.472**	**2.120**

a. Dependent Variable: Number of Areas of Non-Compliance

Appendix E

Descriptive Statistics

	Mean	Std. Deviation	N
Number of Areas of Non-Compliance	13.9677	11.63246	93
Special Education Expenditures	5,978,459.62	4,006,169.296	93
Percentage SPED	.1698	.04956	93

Appendix F

SPSS Data Analysis: Model Summary[b]

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.338[a]	.114	.095	11.06752	.114	5.816	2	90	.004

a. Predictors: (Constant), Percentage SPED, Special Education Expenditures

b. Dependent Variable: Number of Areas of Non-Compliance

Appendix G

SPSS Data Analysis: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1424.803	2	712.401	5.816	.004[b]
	Residual	11024.100	90	122.490		
	Total	12448.903	92			

a. Dependent Variable: Number of Areas of Non-Compliance

b. Predictors: (Constant), Percentage SPED, Special Education Expenditures

Appendix H

SPSS Data Analysis: Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.7134	28.1562	13.9677	3.93535	93
Std. Predicted Value	-2.097	3.605	.000	1.000	93
Standard Error of Predicted Value	1.156	5.066	1.868	.684	93
Adjusted Predicted Value	5.6327	25.8941	13.9758	3.89850	93
Residual	-15.42738	39.26965	.00000	10.94656	93
Std. Residual	-1.394	3.548	.000	.989	93
Stud. Residual	-1.427	3.638	.000	1.009	93
Deleted Residual	-16.72446	41.97078	-.00801	11.39462	93
Stud. Deleted Residual	-1.436	3.917	.007	1.034	93
Mahal. Distance	.014	18.286	1.978	2.770	93
Cook's Distance	.000	.383	.014	.043	93
Centered Leverage Value	.000	.199	.022	.030	93

a. Dependent Variable: Number of Areas of Non-Compliance