A Latent Profile Analysis of Ohio School District Demographic Factors and Their Impact on Value-Added and District Performance Indexes

Ellie Lukas

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Committee:

Jeremy Coles, Ph.D

Chair, Dissertation Committee

Kyle Wagner, Ph.D

Committee Member

Jon Brasfield, Ph.D

Committee Member

Updated 03/10/2020

Abstract

This dissertation contributes to the discussion of what contributes to school district rankings in the state of Ohio. It uses Latent Profile Analysis to explore different variables at the contextual and district level as they correspond to Ohio's Performance Index academic measure and Value-Added academic measure. Results show that contextual variables contribute more to the Performance Index academic measure, while district variables contribute more to the Value-Added academic measure. School districts in Ohio should not be compared solely through Performance Index. Instead, districts should be compared through Value-Added, or a combination of the two. This study calls for an improved individualized comparison model to apply to school districts when evaluating them.

Dedication

I dedicate my dissertation work to my family. A special feeling of gratitude to my husband, Adam Lukas, who was always with me through the journey of struggles and moments of success. To my parents, Mike and Deedi Miller, who showed me the value of having a good work ethic, and the importance of never giving up. To my sister, Estee Blair, for believing in me and being someone to look up to. Finally, to my brother, Aiden Miller, for providing me with endless laughs and hours of Excel assistance.

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Chapter I. Introduction

Background of the Problem

The No Child Left Behind Act (NCLB) was signed by President George W. Bush in 2001 in response to the need for education reform to improve student achievement and change the culture of United States schools (U.S. Department of Education, n.d.-b). This was partially because the Program for International Student Assessment (PISA) showed that students in the United States ranked about average to significantly below average in reading, math, and science compared to their international counterparts (Programme for International Student Assessment, 2003). President Bush even referred to NCLB as the "cornerstone of his administration" and further expressed that "too many of our neediest children are being left behind" (U.S. Department of Education, n.d.-b).

No Child Left Behind was enacted in 2002, representing a significant step in the right direction for children in the United States. It also widely represented the federal government's stark entrance into public school policymaking. Student progress and achievement mainly focused on "race, income, zip code, disability, home language, or background" (U.S. Department of Education, n.d.-a) were the main focus of the NCLB. The goal of NCLB was to narrow the international achievement gap while simultaneously narrowing the achievement gap between middle- and upper-middle-class students and students historically under-served by their schools (Heise, 2017).

In 2007, NCLB was scheduled for revision; over time, however, the requirements of this act were becoming increasingly more difficult for school districts and educators to attain. In 2010, the Obama administration realized the limitations of NCLB. The Every Student Succeeds

Act (ESSA) is a policy implemented by the Obama Administration in response to the shortcomings of NCLB (U.S. Department of Education, n.d.-a). The Every Student Succeeds Act is a modernized reinstatement of the Elementary and Secondary Education Act (ESEA) (U.S. Department of Education, n.d.-b). The initial passing of ESEA in 1965 is frequently seen as a critical starting point for the government's involvement in public education (Saultz et al., 2017). It worked to create a better law that focused more on effectively preparing students for their success in college and their future careers. The reinstatement and amendment of ESEA represented the emphasis of the United States' federal efforts to support elementary and secondary education.

The combination of NCLB and ESEA is "built on four common-sense pillars: accountability for results; an emphasis on doing what works based on scientific research; expanded parental options; and expanded local control and flexibility" (U.S. Department of Education, n.d.-b). While NCLB put strict measures in place that exposed achievement gaps, the Obama administration was able to grant flexibility to states concerning specific requirements of NCLB, requiring states to create intense and comprehensive plans that are designed to "close achievement gaps, increase equity, improve the quality of instruction, and increase outcomes for all students" (U.S. Department of Education, n.d.-a). The Every Student Succeeds Act includes several provisions designed to help guarantee success for the nation's schools and students, including reducing federal authority in policymaking (Saultz et al., 2017).

Unfortunately, the passing of NCLB resulted in an over-reliance on standardized testing and lessened the autonomy of school districts and states. The passage of ESSA in 2015 undid several structural changes put in place by NCLB. This included giving state governments more autonomy in policy control (Heise, 2017). The Every Student Succeeds Act allows states to have

increased flexibility when determining how to measure accountability. Through ESSA, states can also decide how to define teacher effectiveness and develop statewide plans to improve effective teacher distribution (Saultz et al., 2017).

The Every Student Succeeds Act advocates equity for disadvantaged and high-needs students in the United States. For the first time, ESSA required that all schools teach high academic standards to prepare their students to succeed in college and their future careers. This act guarantees that essential information is provided to all education stakeholders via annual statewide assessments that measure their students' progress toward these high academic standards. In addition, ESSA sustains and expands the federal investment in increasing access to high-quality preschools. Finally, along with a considerable amount of further provisions, ESSA upholds an expectation that there will be action and accountability designed to infuse positive change into America's lowest-performing schools, especially those where groups of students are not making an appropriate amount of progress and where graduation rates have remained low for extended periods (U.S. Department of Education, n.d.-a). Though ESSA was an improvement to NCLB's lack of attention to individuality, ESSA unfortunately still ignores underlying socioeconomic and racial issues affecting students, focusing on blanket accountability measures set by individual states (Adler-Greene, 2019).

Because of NCLB, parents knew their children's strengths and weaknesses and how well schools performed. Teachers were also given the training and resources needed for effective teaching, and principals were given access to information necessary to strengthen their school's weaknesses. Superintendents could then see which of their schools and principals were succeeding and which needed assistance to improve. In addition, school boards could measure how their districts were doing and compare their districts with others across their state. Chief

state school officers had access to compare schools in their states and other states to help determine where guidance and resources were needed. In addition, a yearly report card was generated for governors to view how their state's schools are doing. Volunteer groups and community leaders could use the information provided to empower community members to support the children and schools that need it the most (U.S. Department of Education, n.d.-b).

The Programme for International Student Assessment is a collaborative process across about 60 countries that measures student achievement. It collectively brings together these countries' scientific expertise, which their governments steer based on policy-driving interests (Programme for International Student Assessment, 2003). The PISA enables countries to monitor their progress in meeting learning objectives while indicating school systems' performance. Despite the efforts of NCLB and ESSA, analysis of PISA test scores shows that the United States has not improved much since 2000 (Goldstein, 2019). According to a New York Times article by Dana Goldstein, the achievement gap in reading between high and low performers is widening. They reference that although the top 25% of American students have improved their performance on the PISA exam since 2012, the bottom 10th percentile performed worse. The 2018 PISA results showed that American 15-year-olds only scored slightly above students from America's peer nations in reading but scored below average in math. Around 20% of those 15-year-olds scored so low on the PISA test that it seemed like they had not mastered the reading skills expected of a 10-year-old (Goldstein, 2019). Based on these results alone, ESSA should be analyzed and reformed because its goals are not being achieved. However, the PISA exam highlighted that achievement gaps between native-born and immigrant students were smaller than their peer nation counterparts. It has also been shown that socioeconomic gaps in America are not much more significant than in the rest of the world. In America, 3% of children from

low-income families were top performers in reading, compared with an average of 4% of their international peers. In addition, SES caused 16% of the variation in American math performance, compared to the average of 14% among international peers (Goldstein, 2019).

NCLB was created primarily because the United States lagged behind its international competitors (Legal Information Institute, 2020; Programme for International Student Assessment, 2003). Since then, ESSA has been formed to address NCLB's shortcomings. Based on the PISA scores alone, ESSA needs to be reformed, as the United States' international achievement ranking has not improved significantly since the implementation of NCLB (Goldstein, 2019). However, ESSA has taken some power away from the federal government and given more power to the state and local governments, which is one of the goals it set out to achieve. In addition, ESSA has helped to end the one-size-fits-all ideal, making it easier for states to create their own accountability and achievement-measuring systems. Educational policy still has a long way to go; ESSA has fixed many issues brought by NCLB but still needs to address the underlying issues that may contribute to low achievement scores, such as race and SES. Without explicitly addressing all relevant contributors to low achievement, creating a policy that applies to all students regardless of their background is difficult. The Every Student Succeeds Act is a great policy for the time being, but, like any educational policy, it will need to be reviewed and reworked as time goes on to ensure the United States is giving its students all resources and every chance to succeed on these high-stakes tests.

Rationale & Significance of the Study

This study will contribute to the current research on the impact of teaching experience, administrator and teacher salaries, economic disadvantage, school district expenditures and revenue, and disabled students, among other variables, on value-added and performance index

measures of achievement on Ohio school district Report Cards per the Ohio Department of Education. In addition, this study may be useful to school officials when determining what may be impacting their school's achievement ratings. Though the demographics analyzed here may not be easily fixable, they can provide some answers that can help address potential issues through other measures of change.

Purpose of Study

This study aims to analyze the impact of school district demographics on performance index and value-added measures. This study contributes to existing literature regarding school demographic features and district ratings in the state of Ohio. This study may provide insight into what factors of school districts contribute to how they are rated on the Ohio State Report Cards. If a school knows which features may impact their ratings, they could make adjustments when appropriate to offset any weaknesses that could negatively impact their district's reputation. This study will help school districts understand which factors they need to dedicate more resources to, and which ones do not need as much of a focus, when looking to improve their performance index or value-added score.

Research Questions

1. Using Latent Profile Analysis, how many profiles were identified using context variables?
2. Using Latent Profile Analysis, how many profiles were identified using district variables?
3. How well do context variables and district variables predict school district performance indexes and value-added?

These research questions are appropriate for this study because they allow it to examine any variables impacting standardized testing that can contribute to existing research. This study analyzes this data to attempt to determine if there are any relationships between each variable and standardized testing achievement, as well as determine if there are any relationships between each variable. The relationships between each variable will be explored to provide a clear view of what may impact student achievement on standardized testing and what variables are associated with achievement.

Definition of Terms

All terms used in this study are familiar and are common in educational research.

Limitations

One of the main limitations of this study is the source of the analyzed data. Even though data is reported directly to the state, schools gather their data based on individual reports, which cannot necessarily be proven. Another limitation comes with looking at disabled students. Based on this data, it is impossible to differentiate between specific disabilities, which could give an inaccurate result, as not all disabilities reported impact a student's cognitive or academic ability. In addition, two school districts were excluded from this study because they were small and most of their data was too small to be accurately reported, which would have skewed results of this study.

Chapter II. Literature Review

Standardized group achievement tests are the most prominent form of assessing student achievement in American schools. Norm-referenced standardized tests provide a valid basis for determining a student's achievement compared to a normed group of examinees that represent all applicable populations (Gronna et al., 1998). Many school characteristics contribute to students' level of achievement on these standardized assessments. The following literature review will explore different demographic characteristics of school districts in relation to standardized testing. The importance of analyzing these characteristics with respect to each other will also be highlighted.

Enrollment and Attendance

Student attendance has been shown in various studies to significantly impact student achievement, which can be reflected in high-stakes testing. Student attendance is impacted by factors and decisions at the household level and, as the student progresses through school and gains more independence, at the individual level. Factors impacting student attendance can look like anything from a parent working the night shift and not waking their children up on time to get to school to something as simple as the student not wanting to go to school. Children with parents with fluctuating work schedules may need to be more self-reliant in getting ready for/getting to school (Morrissey et al., 2013). There tends to be higher attendance rates in urban schools than rural ones. This could be due to differences in daily life and activities in the two opposing locations that may be related to attitudes toward school and attendance. In addition, higher attendance rates are associated with students with greater wealth. Lower attendance rates are associated with more students per computer at school. Evidence supports a positive relationship between attendance and test scores (Bhattarai et al., 2020). In addition to attendance,

how students perform is a function of ability, quality of schools and teachers, and access to technology, among other factors. It has been shown that after controlling factors related to ability and effort, class attendance significantly impacts grades. When accounting for variables in addition to class attendance, such as gender, there is still a significant positive correlation, but it is smaller. Students with high attendance and many completed assignments tend to perform very well on midterm exams (Latif & Miles, 2013).

Students in low-socioeconomic families face challenges at multiple levels that may impact their likelihood of attending school due to scarce economic resources. These students are more likely than their higher-socioeconomic peers to experience physical, behavioral, and mental health problems, in addition to poorer nutrition and environmental hazards, all of which can lead to more missed days of school. In addition, students in low-income situations tend to experience more residential mobility, which is linked to poorer academic outcomes (Burkam et al., 2009). Children in low-income families tend to be exposed to more family conflict and greater instability in family structure, which makes establishing and maintaining routines difficult, resulting in greater school absences (Burkam et al., 2009).

Lack of attendance has been shown to negatively impact math achievement, even after controlling for socioeconomic status and gender. Overall, it does not appear that lack of attendance has a significant impact across ethnicities. However, Gottfried (2009) did find that increased absenteeism predicted lower reading and math achievement when looking at a sample of second- to fourth-grade ethnically diverse students. Hinz et al. (2003) showed that students who were absent 20% of the time scored 20 points lower than those who attended school nearly every day. In addition, it was shown that elementary students who were present less than 80% of school days scored 20 points lower on a reading achievement test compared to peers who had

close to perfect attendance (Morrissey et al., 2013). Another study on students with limited English proficiency showed that students who failed their fifth-grade English test missed more days, on average, each year in grades one through five than students who passed the test. Roby (2004) concluded that annual attendance averages were significantly lower in low-performing schools. If students miss educational time in school, it may lead to poor grades and further absenteeism (Parke & Kanyongo, 2012; Morrissey et al., 2013), which may lead to poor performance on high-stakes testing.

Chronically absent students suffer academically across reading and math outcomes (Gottfried, 2019). Chronic absenteeism is an extreme form of missing school. It is often defined as missing 10% (about 18 days) or more of a given academic year, which this study uses. It has been called a nationwide crisis (London et al., 2016). As of 2019, between 10% and 15% of all students in the United States were considered to be chronically absent. Gottfried (2009) found a negative impact of chronic absenteeism on a student's academic outcomes in kindergarten. Chronically absent students receive fewer hours of instruction and are more likely to need significant remediation when returning to school (Gottfried, 2019), which could take some instruction time away from other students. Chronic absenteeism can cause students to feel alienated from their classmates, teachers, and school, which may negatively impact students' social interactions and engagement. When students are disengaged in lessons, it is difficult for them to learn and retain information, which could cause lower scores on high-stakes achievement testing (Gottfried, 2019).

Discipline

There is a statistically significant difference in the academic achievement of students who were and were not assigned some type of disciplinary action during their school career.

However, there is no statistically significant difference in the academic achievement of students who were assigned to different disciplinary actions, such as in-school suspension, out-of-school suspension, and expulsion. Students who are not in the classroom learning environment for any or all of these disciplinary actions experience lower achievement on end-of-course exams (Young-Gnintendem & Farmer, 2023).

There is strong evidence that the risks of suspensions outweigh the benefits, even when schools attempt to reduce misbehavior that could disrupt the learning environment (Ibrahim & Johnson, 2019). More than 30% of sophomores who drop out of school have been suspended at some point in their school career. When students are removed from a classroom environment, there is a decline in opportunities for learning and academic success. Often, when placed in in-school suspension, a student is with a monitor that has no established expectations and does not have access to the student's assigned work. This lack of support may compromise their learning opportunities and may even cause a decline in a student's learning (Young-Gnintendem & Farmer, 2023). The effect of suspensions on math achievement persists over time. It has been shown that suspended students score lower in math two years after suspensions occurred, even after controlling for individual characteristics, school characteristics, and prior math achievement (Ibrahim & Johnson, 2019). This suggests that opportunities to recover from the effects of suspension on students' learning may be rare in the years following a student's suspension. Suspensions can foster a cycle of failure, putting students further behind with fewer opportunities to learn and fewer chances to remediate missed learning opportunities (Ibrahim & Johnson, 2019). It has been shown that the effects of in-school and out-of-school suspensions were nearly seven times that of skipped classes and almost ten times that of absences (Ibrahim & Johnson, 2019).

The impact of suspensions eventually exceeds the impact of race and ethnicity and becomes the greatest determinant of math achievement. Despite this, there is an overrepresentation of minority students among all students suspended. Students of color are disproportionately targeted for discipline compared to White students. A recent study indicated that out-of-school suspensions may account for 20% of the Black-White achievement gap in school. According to Ibrahim & Johnson (2019), Black and Hispanic students were roughly 28% of the whole sample but received about 45% of all in-school suspensions and 43% of all out-of-school suspensions. One in six Black students has been suspended at least once, but two in three Black boys have been suspended at some point during their school career (Shollenberger, 2015). In the 2013-2014 school year, 6% of all kindergarten through 12th-grade students received at least one out-of-school suspension. However, 20% of Black boys and more than 12% of Black girls were suspended at some point that year. In contrast, only 5% of White boys and 2% of White girls were suspended during that same period (U.S. Department of Education, 2014). In addition, Black students with disabilities lost about three times as much instruction from discipline as their White peers during the 2014-2015 school year and the 2015-2016 school year (Losen, 2018). Also of note, almost 34% of Black boys with a disability were suspended in high school, twice the rate of White boys with a disability (Losen et al., 2015).

Economically Disadvantaged Students

The Ohio Department of Education defines an economically disadvantaged student as one who is eligible for free or reduced-price lunch, is a resident of a household in which a member is eligible for free or reduced-price lunch, is a recipient of public assistance, and/or whose parents or guardians have completed a Title I student income form and have met the specified income guidelines (Ohio Department of Education, 2021-a). The Title I law requires

that funds be provided to schools based on the number of children from low-income families living in that school's attendance area. The federal funds schools receive depend on the completed and submitted Title I forms (Ohio Department of Education, 2014).

Free- and Reduced-Priced Lunch

The National School Lunch Program (NSLP) was established under the Richard B. Russell National School Lunch Act, which was signed into law by President Truman in 1946 (U.S. Department of Agriculture, 2019). In its first year, about 7.1 million children participated in the NSLP; by 2016, that number rose to 30.4 million (U.S. Department of Agriculture, 2019). The NSLP is managed by the U.S. Department of Agriculture (USDA), which provides funding that allows schools to offer a healthy lunch every day on the condition that the meal meets the federally established nutrition standards (Benefits.gov, 2010). As of July 1, 2022, schools will be reimbursed $0.68 per free/reduced-price lunch (U.S. Department of Agriculture, 2022). This will result in an estimated $4.3 billion more in school and childcare meal programs, replacing the nearly $2 billion that the USDA has already funded. This increase in funds will help ensure schools can continue to provide high-quality meals to students amidst the current higher food costs and supply chain challenges (U.S. Department of Agriculture, 2022).

The NSLP is typically operated by public or non-profit private schools, residential child care, and charter schools (U.S. Department of Agriculture, 2019). All lunches provided by NSLP must meet federal requirements, but local school food authorities mandate specific decisions, such as the type of food to serve (U.S. Department of Agriculture, 2019). Students can be eligible for free meals through participation in other Federal Assistance Programs or based on their status as homeless, a migrant, runaway, or foster child. Children enrolled in Head Start or a state-funded pre-kindergarten program are also eligible for free meals (U.S. Department of

Agriculture, 2019). In addition, children can qualify for free or reduced lunches based on household income and family size. A child from a family with an annual household income at or below 130% of the Federal poverty level is eligible for free meals. Children from families with annual household incomes between 130% and 185% of the federal poverty level are eligible for reduced-price meals, where schools can not charge more than 40 cents for lunch (U.S. Department of Agriculture, 2019). Schools receive cash reimbursements from the USDA when participating in the NSLP, in addition to receiving USDA foods of their choosing (U.S. Department of Agriculture, 2019).

Student participation in the NSLP is typically the only indicator of student SES available in administrative data. Because of this, NSLP enrollment is often used as a representation of economic disadvantage, including for-school finance policies such as federal Title I funds (Domina et al., 2018). Domina et al. (2018) found that NSLP enrollment does not do a good job of expressing students' socioeconomic resources via the IRS-reported annual household income; however, school-reported measures of students enrolled in free and reduced lunches have a stronger correlation with test scores than that of IRS-reported income. Enrolling in free and reduced lunches may provide insight into other dimensions of economic disadvantage beyond the reported household income (Domina et al., 2018). It has been shown that receipt of free and reduced lunch enrollment and duration of receipt has a small but positive association with school absences, negatively impacting students' academic performance (Morrissey et al., 2013). However, the data given by free and reduced lunch enrollment are weighed heavily on unverified reports of household income, and that accuracy is not clear. In addition, the free and reduced lunch program only requires data from one element of socioeconomic disadvantage and does not require information such as parental education, residential stability, neighborhood resources, and

other family background information associated with educational outcomes (Domina et al., 2018).

Household Wealth

Household wealth has been associated with IQ and school achievement in varying degrees worldwide (Wilson, 2019). Socioeconomic status is generally determined by parents' education level, income, and occupation. Socioeconomic status has a considerable impact on students' academic performance. Students from high-SES backgrounds are assumed to have parents with postsecondary education (Houston & Xu, 2016). Entwisle and Astone (1994) found that parents with higher education degrees could be more of an asset to students' education. These parents are more likely to encourage their children to pursue higher education, provide them with activities to enrich their schoolwork at home and enhance their children's language abilities. More educated mothers tend to provide a more supportive environment for child development than less educated mothers (Hasanagic, 2015). It has been shown, however, that material resources at home, such as the number of books or access to additional learning opportunities, only account for about one-third of the achievement gap between high- and low-socioeconomic-status families (Morrissey et al., 2013).

Higher education also implies higher wages, which could give students access to higher-quality educational services. Higher SES and better-educated mothers are favorable social factors critical to a child's academic achievement (ElHassan et al., 2018). It has also been found that economic depression is less likely to affect students from high-SES families because those families tend to be more financially stable (Takashiro, 2017). Marzano (2003) found that parents' income level had the most impact on school achievement, followed by occupation and level of education. Financial stability can be a predictor of what school a student attends. A

school's SES has a significant impact on academic achievement. Students from more economically affluent schools tend to outperform financially disadvantaged ones (Takashiro, 2017). The "quality and intensity" of high school classwork is the "strongest predictor of obtaining a bachelor's degree" (Houston & Xu, 2016). Economically affluent schools have access to more resources to improve their coursework quality compared to financially disadvantaged schools. Students with access to additional resources have a more enriching educational experience and perform better academically. Students attending low-SES schools are less likely to take advanced math classes and tend to be negatively influenced by their peers. Students attending more affluent schools have more opportunities than students attending lower-SES schools (Takashiro, 2017).

High- and low-SES populations have different thinking patterns shaped by their societal and community experiences. The lack of income, job stability, the tendency to live in dangerous neighborhoods, and the lack of stable housing diminishes low-SES individuals' goals, interests, and social opportunities. High-SES individuals have a higher income, more job stability, and better social connections, allowing them to strive for larger goals and have more social opportunities. Low-SES individuals are more concerned with their immediate environment and means of survival. These individuals tend to live paycheck-to-paycheck, making it difficult to achieve the same goals as their high-SES counterparts. Attaining the same goals as their high-SES counterparts is more difficult for low-SES individuals simply because they cannot access as many resources. (Dixson et al., 2018). The achievement gap between children living in low-income families versus high-income families begins before kindergarten and only widens with age (Morrissey et al., 2013).

Race and ethnicity tend to impact certain situations. According to Jung (2014), there appears to be a racial gap in mathematics in the early school years, especially for children from low-SES backgrounds. Regardless of teaching strategies, it is essential to emphasize the importance of cultural context when investigating the effects of SES on student achievement (Zha & Hall, 2019).

Socioeconomic status also impacts standardized testing achievement. Parents with higher SES are better at academically preparing their children for school, usually because they have access to more resources that encourage and support child development. Parents with higher SES also have resources to find information on providing as many benefits for their children as possible (Hasanagic, 2015). Dahl and Lochner (2012) found that an increase in income of just $1,000 was associated with a 2.1% of a standard deviation increase in children's math test scores, and a 3.6% of a standard deviation increase in children's reading test scores.

Primary caregivers' expectations of students can influence students' academic achievement. Higher academic expectations of low-SES families "lessened the difference in average maths attainment between students from lower- and higher-SES families" (Zha & Hall, 2019). When students reach ages 10-15, high parental expectations reduce the impact of low SES on math achievement. Mathematics learning during early elementary school provides the foundation for students' later academic achievement (Kim et al., 2018). It is shown that students from lower-income families with informal learning opportunities can display the same learning gains as children from middle-income families (Morgan et al., 2016).

In Cueto et al.'s (2014) study, they found that of the questions asked to students, high-SES students attempted nearly three times as many exercises as their low-SES peers. This supports the idea that low-SES children have fewer learning opportunities than their high-SES

peers. Students with fewer opportunities to learn may fail to acquire foundational knowledge, which can harm their academic success (Morgan et al., 2016). Low levels of math achievement contribute to an increased chance of unemployment and socio-emotional maladjustment (Morgan et al., 2016).

Mathematics and academic ability are not the only aspects of a student's life impacted by SES. SES also impacts reading skills. Children at "anatomical risk of reading difficulties" were reading at a somewhat age level if they came from a high SES background. However, at-risk children from a low-SES background experience difficulties with their reading level (Diuk et al., 2019).

Students with Disabilities

Over the past several decades, the number of students in United States classrooms has dramatically changed. This change has increased the number of disabled students being educated in general education classrooms (Harbour et al., 2018). Section 300.8 in the Individuals with Disabilities Education Act (2004) defines a "child with a disability" as:

> Child with a disability means a child evaluated…as having an intellectual disability, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance,…an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.

The introduction of ESSA mandated that all students must receive instruction that prepares them to meet the needed standards to succeed after high school and maintain equal practices and protections for high-needs students (Harbour et al., 2018). Students with disabilities are

guaranteed to be educated in the least restrictive environment available to them that benefits their educational advancement (Pak & Parsons, 2020). Typically, this comes in the form of co-teaching classrooms. Though some parents perceive these co-taught classrooms as a potential risk to their non-disabled student's achievement, others insist that inclusive education is a matter of human rights (Pak & Parsons, 2020).

A proven equity gap exists between students without disabilities and their disabled counterparts (Pak & Parsons, 2020). Szumski et al. (2022) found that students learning in traditional classrooms have a higher SES than students from inclusive classrooms with or without co-teaching. In turn, many parents with an increased SES perceive that inclusive classrooms can have a negative impact on students without disabilities. These beliefs directly conflict with the idea that inclusive education improves the quality of education (Szumski et al., 2022).

In the past, certain students have been exempted from testing or have received particular testing accommodations. These include disabled students, students for whom English is not their primary language, and home-schooled students (Gronna et al., 1998). Because these students were exempt from taking those standardized tests, their scores were not included in their schools' group summary reports, actively excluding and omitting them from reported data (Gronna et al., 1998). Currently, achievement assessment is mandated via federal and most state laws. The Individuals with Disabilities Education Act of 1991, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and Goals 2000: Educate America Act of 1994 are all federal statutes that have affected assessment procedures in schools for disabled students (Gronna et al., 1998). The specifics of these statutes all revolve around giving disabled students a free and appropriate public education (FAPE) and ensuring disabled students are not

excluded from, discriminated against, or denied the benefits under any program or activity federally funded, including public education (Gronna et al., 1998). These federal statutes, therefore, make it illegal to exclude students with disabilities from statewide assessments (Gronna et al., 1998).

All standardized tests have been normed using students who represent the entire examinee body. However, no test has been explicitly normed for students with disabilities. This can be supported by the study completed by Harbour et al., which found that a student without a disability can score up to 20.65 points higher than a student with a disability on standardized tests (2018). For example, Gronna et al. (1998) concluded that of the 10% of total students who qualified for special education services in Hawaii, their standardized tests were normed on a population of about 4.9% of students with disabilities. Excluding students with disabilities from the norming process could be partly because including students with disabilities in the norming process would lower performance standards or average test scores (Gronna et al., 1998). Norming a test for disabled students would be beneficial because you could compare individual student performance within specific disability categories to create a clear picture of all different types of student achievement (Gronna et al., 1998).

Administrator Salary

The Ohio Revised Code (ORC) has a section dedicated to school staff salaries aside from classroom teachers. This section does not give required base salaries but instead includes formulas to calculate costs per fiscal year, as administration salaries vary per each school district's fiscal year. However, this section of the ORC includes average salaries using fiscal year 2018 data, which will be reported here. The “average other district administrator salary,” including assistant superintendents and directors, had salaries greater than $50,000 but less than

$135,000. Average principal salaries were greater than $50,000 but less than $120,000. The average superintendent's salary was over $60,000 but less than $180,000 (City, local, and exempted village school district base cost, 2022).

Principals impact student performance, but their impact is indirect because they mainly deal with aspects of school that directly influence teachers, who in turn influence students (Tran, 2017). Previous studies have shown that increasing principal turnover frequency seems to impact school achievement gains. It is associated with an increased frequency of teacher turnover. These impacts are more pronounced for low-achieving and high-poverty schools. Evidence suggests low student achievement may lead to principal turnover (Tran, 2017). A principal's salary is associated with principal retention as well. It was shown that high school principals' pay satisfaction is influenced by the salaries of comparative peers (e.g., principals at neighboring districts). Principals who stay in one school for at least three years and stay for five to seven years have a better chance of positively impacting student performance (Tran, 2017). Because low achievement may lead to principal turnover, and principal turnover seems to impact school achievement gains, low-achieving and high-poverty schools may be at a more significant disadvantage than their higher-achieving and more affluent counterparts. These schools may not have the opportunity to take full advantage of what a principal could offer if their turnover rate is higher.

More research is needed on this topic to draw any definitive conclusions regarding school administrator salaries and student achievement on standardized tests. Though one study found that administrative salaries were positively related to test score performance, there was no significant relationship (Mensah et al., 2013). This study also referenced that there is a generally insignificant relationship between test scores and administrative spending in the state of New

York. However, though it may have resulted from chance, Tran and Buckman (2017) found that reading performance was positively associated with higher salaries. This study also outlined that increasing a principal's relative salary by 5% may raise the average student's gain score by about 20%. In 2011, the governor of New Jersey revised the Administrative Code of the Department of Education and placed a cap on superintendent salaries. This cap caused superintendents to migrate to neighboring states, causing schools to assert that the salary cap placed their school districts at a competitive disadvantage when attracting top administrative talent. This contributed to the perception that school administrators randomly increase non-mandatory and unproductive spending that is detrimental to the quality of education (Mensah et al., 2013). Mensah et al. (2013) allege that although the total amount of education funding has increased over time, it is unclear if this increase can be linked to a better quality of education. At the end of their study, Mensah et al. (2013) conclude that it is apparent that administrative salaries did not have a consistent influence on student test outcomes.

Principal Level of Education and Experience

No Child Left Behind implies a belief that principals affect student achievement within their schools (Dhuey & Smith, 2018). Negative relationships have been discovered between student test scores and principal education (Tran & Buckman, 2017). Dhuey and Smith (2018) have shown that brand-new (inexperienced) principals have a detrimental effect on test scores. Incoming principals with no prior experience reduce the number of students who attend school daily and the number of teachers with more than 11 years of experience. In addition, they have been shown to increase levels of teacher turnover and the percentage of teachers with 0-3 years of experience (inexperienced teachers). If a school wants to improve its students' academic achievement, it should hire a high-quality principal, or it should avoid hiring low-quality

principals and principals with no prior experience. Dhuey and Smith (2018) showed that a principal moving up one standard deviation in the principal quality distribution would increase graduation rates and English exam scores by approximately 2.5% points. It should be taken into consideration, however, that the observed effectiveness of principals may be related to the match between the principal and their assigned school rather than the effectiveness that principals can carry from one school to another (Dhuey & Smith, 2018).

Gumus et al. (2024) argue that there is no consistent evidence that years of experience as a principal or a principal's level of education has an impactful relationship with student achievement. However, they did note that a principal's prior experience in other school management positions was related to student achievement. Gumus et al. (2024) identified that principals with previous experience being a principal and experience in other school management positions had small but statistically significant associations with student achievement. However, a principal's level of education and years of previous teaching experience did not predict student achievement. On the other hand, Dhuey and Smith (2018) indicated that having an advanced degree is positively associated with principal effects in reading. This effect is observed simply by having an advanced degree; the specific type of advanced degree does not significantly impact reading. In addition, no significant effect was observed in math achievement. Principals can have a large effect on students' math and reading test scores. However, it should be noted that much of their impact is most likely related to the match between the principal and the school (Dhuey & Smith, 2018).

Average Classroom Teacher Salary

The ORC has specified minimum required salaries for teachers in Ohio. This code specifies that the required minimum "base salary" for teachers with a bachelor's degree is

$30,000. As a teacher's education level increases, so does their salary. For example, a teacher's minimum required base pay with five years of training, and no Master's degree is $31,140, and a teacher's minimum required base pay with a Master's degree or higher is $32,850 (Minimum salary schedule for teachers, 2019). According to the 2018 fiscal year, the average salary of teachers in Ohio had salaries greater than $30,000 but less than $95,000 (City, local, and exempted village school district base cost, 2022).

The impact of classroom teacher average salary on student achievement has been thoroughly researched. From studying the specific salaries of teachers to studying bonuses offered by schools when hiring new teachers, studying classroom teacher salary concerning student achievement has been done before. Studying the impact of teacher salary on student achievement concerning other variables, which this study will analyze, will be important when administrators look for ways to improve their students' achievement levels.

Teacher salaries are difficult to alter, as they typically come from their school district's fixed budget (Greaves & Sibieta, 2019). Greaves and Sibieta (2019) state that if budgets are altered to give teachers higher salaries, that money will be taken out of non-staff expenditures. Because of the reduction in non-staff spending, the positive effect of raising teacher salaries will be almost exactly countered by this reduction in expenditures, proving the increase in teacher salaries from a fixed budget ineffective (Greaves & Sibieta, 2019). Roza (2009) recommended that schools look at their budget to see which cost areas can reasonably be reduced to increase teachers' salaries. This may assist teacher retention in "high priority" positions, such as remedial courses in core subjects. Roza (2009) also mentioned that if a salary increase is not possible, schools should reallocate resources to reduce responsibilities for some teachers and increase them for others. Evidence shows that increasing teacher salaries, though decreasing non-staff

expenditures, increases staff attendance (Greaves & Sibieta, 2019). Greaves and Sibieta (2019) even found that when teacher wages increased, the amount of time teachers were absent decreased by 12%. The importance of teacher attendance is emphasized in Roby (2013), stating that the average lowest-ranked schools studied had an 87.28% teacher attendance rate, while their average highest-ranked schools studied had a 97.83% teacher attendance rate.

Petty et al. (2013) support the study done by Greaves & Sibieta (2019) by stating that teacher salary had a positive relationship with math and reading achievement and that test scores were higher in schools that offered their teachers financial incentives for good academic performances. Yontz and Wilson (2021) provided the most accurate summary of this topic, stating that even the wealthiest public school districts do not have the resources to increase teacher compensation to the degree that would show changes in growth and achievement that would be noticeable to the public.

Amount of Teaching Experience

The concept of "experience" varies per the qualities or abilities of teachers (Kukla-Acevedo, 2009). Generally, experience is defined as a variable measuring the number of years an individual has been teaching (Kukla-Acevedo, 2009). Due to the recently developed teacher shortage, analyzing the impact of teacher experience on student achievement is of utmost importance (Kini & Podolsky, 2016).

There is a strong relationship between student achievement and teacher quality (Subiaur & Chen, 2021). Undoubtedly, competent, expert (veteran) teachers positively affect student achievement (Kocakaya & Kocakaya, 2014; Kukla-Acevedo, 2009; Kini & Podolsky, 2016). Teachers with more experienced colleagues are more effective than teachers with less experienced colleagues, suggesting that the more experienced teachers benefit their school

beyond their classroom (Kini & Podolsky, 2016). It is shown that teachers with more than five years of experience are more productive in their profession, and it continues to rise with experience (Kocakaya & Kocakaya, 2014) with the positive effect of teacher experience peaking at 14 years (Kukla-Acevedo, 2009). After these 14 years, teacher experience starts to negatively impact student learning. However, Kini and Podolsky (2016) and Bhai and Horoi (2019) found that teachers' gains from their experiences are highest in their initial years but often continue through the second and third decades of their careers. Bhai and Horoi (2019) found that the gains from teacher experience are steep during the first three years of a teacher's employment, but those gains remained flat with additional years of employment. Though a teacher's competence has a positive effect on student achievement, there is a low correlation specifically between teachers' experience and student achievement (Kocakaya & Kocakaya, 2014; Grajcevci & Shala, 2021; Bhai & Horoi, 2019).

The most prominent effects of teacher experience are observed in African American students and students who perform above average (Kukla-Acevedo, 2009). When a group of students is split into specific racial, income, and academic performance groups, the performance of African American students can be predicted by teacher experience and other school characteristics (Kukla-Acevedo, 2009). Unfortunately, there is an equity problem in education, as students of color and low-income students are more likely to be taught by less experienced teachers, which can result from attending schools with high teacher turnover rates (Kini & Podolsky, 2016). Inexperienced teachers are typically highly concentrated in underserved schools, where students need the most quality teachers. Students in the highest-poverty schools are 50% more likely to have a teacher with less than four years of experience than students in the lowest-poverty schools. However, not every inexperienced teacher is less effective, and not

every experienced teacher is more effective. As teachers gain experience, their students are more likely to succeed beyond test scores, including increasing their school attendance. Kini and Podolsky (2016) stated that just one year of experience allowed an English teacher to reduce high absenteeism by 2%. A teacher with over 21 years of experience reduces high absenteeism by 14.5%. More experienced teachers provide the most benefit to higher-risk, chronically absent students (Kini & Podolsky, 2016).

Teacher Attendance Rate

Studies have produced mixed results regarding whether teacher attendance/absence impacts student achievement. One study showed that ten additional days of teacher absences reduced student achievement by 1% to 3% of a standard deviation (Tingle et al., 2012), while most studies have documented small negative relationships between teacher absences and student achievement. Tingle et al. (2012) found that the relationship between teacher absences and standardized achievement scores was negative, meaning the more teacher absences, the lower their student standardized achievement scores.

Teacher Level of Education

Most studies conclude that degree level does not strongly predict teacher effectiveness, measured by student achievement. Chang et al. (2020) state that roughly 56% of United States public school teachers hold a master's degree or higher. The importance of advanced degrees appears to vary based on what someone teaches and who someone teaches; the most significant impact of a teacher having an advanced degree appears to be in high school classrooms (Chang et al., 2020). For example, African American students appear to benefit from working with teachers who have earned advanced degrees, especially in math. There appears to be a negative association between advanced degrees and elementary school achievement. Most teachers in

elementary schools teach multiple content areas rather than focusing on just one or two. Advanced degrees do little to improve elementary teachers' abilities to increase student achievement. The results of Chang et al. (2020) did not reveal an obvious correlation or pattern between advanced degrees and student achievement.

Curry et al. (2018) showed a statistically significant difference among fourth-grade reading achievement scores for three variables: National Board Professional Teaching Standards Status, teacher preparation route, and degree earned. They found that teachers with National Board Certification were shown to have a slight increase in student achievement (about 1.3 months) compared to similar teachers without a National Board Certification. Curry et al. (2018) also showed a positive correlation between a teacher's degree and mathematics certification and high school student achievement. However, no evidence supported a connection between advanced degrees and student achievement in general. It appears there is a significant difference, however, between teachers with a bachelor's degree and teachers with a master's degree. Students of teachers who earned a master's degree performed significantly higher than students of teachers who earned a bachelor's degree (Curry et al., 2018).

District Teacher and Principal Evaluations

It has been shown that higher management quality is strongly associated with better educational outcomes, showing an increase of between 0.2 and 0.4 standard deviations of pupil outcomes (Bloom et al., 2015). Two key features that account for a large fraction of good management performance are principals' strong ability to an external governing body and exercising strong leadership through a coherent long-term strategy. Principal evaluations may represent an essential strategy for improving schools, including closing the achievement gap and increasing student achievement. Over time, the focus of principal evaluations has shifted from an

appraisal of managerial skills to evaluating the principal's leadership skills. It has been shown that principals are more likely to engage in leadership behaviors when school districts use evaluation processes that hold them accountable. When principals function as instructional leaders, they can impact student achievement by as much as 25% (McMahon, 2016).

After observing that teacher performance ratings may have been inflated or inaccurate, the Obama administration incentivized states to reform their evaluation systems with Race to the Top grant competitions and federal waivers from NCLB (Kraft et al., 2019). Over the past decade, almost every state has reformed its teacher evaluation systems to make subjective classroom observation ratings assigned by principals or other school-based administrators the primary component of teachers' evaluation scores (Kraft et al., 2019). It has been shown that principals are typically only able to differentiate teachers' abilities at the tails of the evaluation distribution and struggle to identify teachers at middle levels. A positive relationship has been observed between student achievement gains and teacher evaluation scores based on ratings by peer evaluators and administrators.

Classroom Aides

Prior studies have shown no strong evidence of teacher aides' impact on student achievement outcomes (Andersen et al., 2020). However, Andersen et al. (2020) show that aides positively impact test scores and that those positive effects persist over time for disadvantaged students. Recently, teacher aides have developed from assistants to participants in teams that share instructional responsibility for a single classroom. Currently, "aides" can look like teaching assistants or co-teachers. Previously, teaching aides were primarily used in disadvantaged schools or classrooms (Andersen et al., 2020). Aides can positively impact the classroom by being flexible in where they are needed. Teacher aides can be used to divide academic tasks

within the classroom, which could allow them to target more disadvantaged students. The effects of a co-teacher or teaching assistant are significantly positive for reading. There is no significant difference in achievement between whether a student receives help from a teaching assistant or a licensed co-teacher. Literature has shown that although teaching assistants and co-teachers positively impact a student's math performance, there are no significant improvements in math scores. Farrell et al. (2010) indicated that the academic achievements of elementary students with identified difficulties in learning, typically in literacy, improve significantly following a period of targeted intervention from teaching assistants.

Andersen et al. (2020) showed that a licensed co-teacher improves reading scores by 0.7% of a standard deviation per lesson per week, and teaching assistance improves reading scores by 0.6% of a standard deviation per lesson per week. However, It should be noted that the impact of co-teachers and teaching assistants could vary depending on how they work with students (separate setting, small group, one-on-one, etc.). Some studies do not support the impact of teaching assistants and co-teachers in the classroom. As cited in Farrell et al. (2010), some studies believe that the presence of teaching assistants in core classes may not positively impact the achievements of all pupils. One study stated, "The more support pupils received, the less progress they made." According to Farrell et al. (2010), however, the presence of teaching assistants in the classroom had no clear or consistent effect on a student's average attainments.

District expenditure per pupil

Mensah et al. (2013) and Parke and Kanyongo (2012) referenced that there is no statistically significant relationship between per-pupil spending and educational achievement in U.S. public schools. However, other studies, as referenced in the study completed by Mehsah et al. (2013), concluded that a positive relationship exists between per-pupil spending and

educational achievement. Subiaur and Chen (2021) have shown that more money invested in education does not necessarily mean student test scores will increase. They stated that this data was driven by researchers with political ties, so the studies completed may have been biased, as other researchers had found that funding had significant effects. In addition, Subiaur and Chen (2021) found that a larger and more positive correlation may be present between expenditures and test performance when looking at district expenditures concerning population. Students in schools that spend more per pupil may be underperforming because they are more likely to be students with a socioeconomic disadvantage than their peers (Lamperez & Dereshiwsky, 2016). This inequality can be attributed to the concept of "ecological equity," which compares the environments in which students from economically disadvantaged backgrounds experience as opposed to their economically advantaged counterparts (Lamperez & Dereshiwsky, 2016).

Baker (2016) acknowledged that most research suggests no statistically significant correlation between school spending and student outcomes. However, Baker (2016) estimated that a 22% increase in district spending per pupil throughout all school-age years for low-income children is enough to eliminate the education gap between children from low-income families and middle- to high-income families. In addition, increasing that spending by 10% in all school years increases the probability of high school graduation by about 7% for all students, about 10% for low-income children, and about 2.5% for middle- to high-income children.

Roza (2009) analyzed expenditures per pupil by using actual teacher and aide salaries and calculating per-course spending, making it easy to determine per-pupil spending. This study looked at one school in a small western district with one high school (District 1), a midsize eastern district with ten high schools (District 2), and a midsize western with six high schools that are divided into small learning communities (District 3). They found that Districts 1 and 2

spent less money per pupil on average for core classes and spent more money per pupil on average for noncore classes, including electives and foreign language. Roza (2009) stated that teacher salary and class size are vital variables when identifying why there are cost differences. Specifically, when looking at District 2, lower class sizes and higher salaries in the noncore classes played a part in the differences in per-pupil course spending. In addition, some teachers taught fewer classes than others, which also impacts the spending differences. District 3 had larger class sizes in noncore classes, causing the per-pupil spending to be lower than that for core classes, rather than teacher salaries impacting the spending (Roza, 2009).

Financial inequity per school must be analyzed through the "ecological inequity" lens to achieve realistic results (Lamperez & Dereshiwsky, 2016), especially since abundant research shows economically disadvantaged students underperform compared to their economically advantaged peers. It will ultimately cost school districts more if policies do not address ecological equity (Lamperez & Dereshiwsky, 2016). Addressing ecological equity will benefit economically disadvantaged students and will inevitably increase standardized test scores, even if not by much.

District revenue per pupil

It has been shown that district per pupil revenue may not predict academic achievement (Wilson, 2019). Mensah et al. (2013) referenced that if school districts collect most of their revenue locally, their students perform better than school districts that collect most of their revenue from the government. This could be because schools feel more accountable for their expenditures if their revenue is from local sources instead of the revenue gathered from the federal government (Mensah et al., 2013).

One study showed that the revenue created from a newly installed wind farm amounted to approximately $1000 per pupil within two to three years (Brunner et al., 2022). This increase in revenue had virtually no impact on student achievement. To put this minimal impact into perspective, the calculated impact of this increased revenue after the next five years is negative 0.8% of a standard deviation for the baseline sample, which is statistically insignificant (Brunner et al., 2022). They emphasized that the only negative impact may come from the noise pollution caused by the wind turbines, but this has nothing to do with school revenue. In addition, this study found that increased revenue had no detectable impact on high school graduation rates. Instead, the only noticeable impact of increased revenue from installing these wind farms was higher tax rates (Brunner et al., 2022). With higher revenue inevitably comes increased spending. Brunner et al. (2022) found that increased spending with the amount low-income school districts receive from these wind turbines will most likely cause a 0.0007 standard deviation increase in test scores after six years. However, if schools are inefficiently using this new revenue on capital instead of current spending, there will not be any impact on student achievement via these wind turbine installations (Brunner et al., 2022). Finally, Brunner et al. (2022) concluded that increased school revenue ends up increasing school expenditures that have little to no impact on student achievement.

In contrast, Kreisman and Steinberg (2019) found that increased revenue and expenditures have a noticeably positive impact on student achievement, particularly in later grades. Kreisman and Steinberg (2019) estimate that an additional $1000 per year in base funding, or a 10% increase in expenditures, improves reading scores by about 0.1 standard deviation and math scores by more than 0.07 standard deviations. In addition, they estimate that an additional $1000 per year since third grade results in a 0.1 standard deviation increase in SAT

scores, with an even more meaningful increase in disadvantaged districts. More specifically, Kreisman & Steinberg (2019) observed a 9% increase in college enrollment and a 4% increase in college graduation. It should also be noted, however, that additional funding does not uniformly impact all schools, and some schools cannot allocate resources and funds as effectively as other schools (Kreisman & Steinberg, 2019). For example, increased funding can decrease high school dropout rates and increase on-time graduation rates, which is most apparent in poorer districts (Kreisman & Steinberg, 2019). Previous studies have analyzed the impact of funding on achievement, primarily relying on school districts that were not adequately funded, typically in poorer communities (Kreisman & Steinberg, 2019). This is supported in Kreisman and Steinberg's study, as reading and math gains are almost entirely driven by districts comprised of between 53% and 72% of economically disadvantaged students (2019).

Kindergarten Readiness Assessments, Language & Literacy

Early childhood is a time of rapid development. Access to high-quality cognitive and literary stimulation is essential for later achievement (Tavassolie et al., 2022). The Obama administration's "Race to the Top" indicated that implementing Kindergarten Readiness Assessments (KRAs) was a priority for applicants for federal aid. KRAs provide a unique opportunity to better understand the emergence of literacy disparities (Herring et al., 2022). Kindergarten literacy skills are strong predictors of third-grade reading scores, in addition to gender, ethnicity, race, and English language proficiency (Herring et al., 2022; Tavassolie et al., 2022). It has been shown that children who are not reading on grade level by third grade are four times more likely to drop out of high school than students who are reading at grade level (Herring et al., 2022). Starting school with strong academic skills is vital for later achievement. It

has been shown that children who started school with below-average academic skills sometimes performed over two standard deviations below their peers (Tavassolie et al., 2022).

Children from low-income backgrounds often begin school with underdeveloped skills compared to children from more advantaged backgrounds. Students exposed to poverty and other early adversities impact their' self-regulation, which makes it harder for students to be "behaviorally ready" for school, which negatively impacts their likelihood of thriving in school. According to Tavassolie et al. (2022), students with overall poor school readiness had higher odds of being retained in third grade than all other profiles. It has been shown that students in racial minority groups were more likely to be in school readiness profiles characterized by cognitive risk compared to their White counterparts (Tavassolie et al., 2022). Black, Hispanic, and low-income students are especially at risk of reading below grade level in third grade. These students tend to enter kindergarten with fewer literacy skills on average than their peers. Black and economically disadvantaged students whose skills are in the lowest quintile are roughly 20 percentage points less likely to reach reading proficiency in third grade. White and more economically advantaged students are more likely to be proficient readers by third grade than their Black, Hispanic, and economically disadvantaged peers, even when these students all start kindergarten at the same literacy level (Herring et al., 2022). According to Tavassolie et al. (2022), bilingual children and children who speak languages other than English at home tend to start school behind their peers in terms of cognition and language, but eventually catch up and end up ahead of their peers later in elementary school. English language learners outperform non-English language learners in elementary school and appear to be more likely to pass high-stakes standardized tests (Tavassolie et al., 2022).

Summary

It has been shown across a variety of studies that student attendance has a significant impact on student achievement. Attendance can be impacted by various factors and decisions at the household and individual levels (Morrissey et al., 2013). Not surprisingly, this also applies to chronically absent students. Chronically absent students receive fewer hours of instruction and are prone to needing significant educational remediation when returning to school (Gottfried, 2019). Often, students who are disadvantaged have more attendance concerns, likely due to issues such as living in single-parent homes or parents' fluctuating work schedules (Morrissey et al., 2013). Students in low-income situations tend to experience more residential mobility, which is linked to poor attendance and poor academic outcomes. Children in these low-income families may be exposed to increased family conflict and greater instability in family structure and daily routines (Burkam et al., 2009).

There is a statistically discrepant difference in students' achievement between those who were and were not assigned some disciplinary action during their school career. Students who are not learning in the classroom environment for expulsion, in-school suspension, or out-of-school suspension experience lower achievement on end-of-course exams (Young-Gnintendem & Farmer, 2023). There is strong evidence that the risks of removing a child from school for disciplinary reasons greatly outweigh the benefits, even when schools attempt to reduce misbehavior that could disrupt the learning environment (Ibrahim & Johnson, 2019). When removed from a classroom environment, especially for an extended period of time, there is a decline in opportunities and academic success (Young-Gnintendem & Farmer, 2023). Opportunities to recover from the negative impacts of suspension and expulsion may be rare in the years following the student’s disciplinary action. The effects of in and out-of-school

suspensions are nearly seven times the effects of skipping classes and almost ten times the harmful effects of absences (Ibrahim & Johnson, 2019).

Students from low-SES backgrounds have an unfair disadvantage in academics. Their academic performance is rarely not impacted by SES. With this being said, it is unjust for educators to view the achievement of students from low-socioeconomic backgrounds the same as students from high-socioeconomic backgrounds (Hasanagic, 2015). The environment in which students live directly correlates to their academic achievement; anything from family income to parents' level of education can impact academic achievement. When a student has parents with a low level of education, those parents will most likely make less money than parents who are highly educated. Therefore, parents with a low level of education and low annual income cannot provide as many resources to their students as parents with a high level of education and a high annual income. This directly results in most students from lower-SES families not having high achievement levels compared to their high-SES peers (ElHassan et al., 2018; Entwisle & Astone, 1994; Hasanagic, 2015; Houston & Xu, 2016; Marzano, 2003; Morgan et al., 2016; Takashiro, 2017).

Students with disabilities are chronically underrepresented in widespread standardized testing (Gronna et al., 1998). Though disabled students are legally required to take statewide assessments, no standardized test has been explicitly normed for disabled students. This can be concerning, especially since Harbour et al. (2018) found that disabled students score up to 20.65 points less on these tests than their non-disabled peers. If a standardized test is explicitly normed for disabled students, administrators could then more accurately compare student performance within specific disability categories and could see a more accurate picture of a student body's achievement.

Administrator and teacher salaries do not appear to have as much of an impact on student achievement. However, there is so much conflicting research that it is difficult to draw a definitive conclusion regarding this topic. It appears that increasing salaries may decrease beneficial funding for necessary educational resources, effectively canceling what could potentially be a positive change (Mensah et al., 2013; Greaves & Sibieta, 2019). Roza (2009) insisted that a positive change in academic achievement could occur in theory, assuming that schools adjust their budget to cut funding from unnecessary or non-productive resources to allocate more money to teacher and administrator salaries. In addition, increasing salaries may increase attendance and retention for administrators and teachers.

Negative relationships have been discovered between principal education and student test scores (Tran & Buckman, 2017), particularly with inexperienced principals (Dhuey & Smith, 2018). Principals with no prior experience have been shown to reduce the number of students who attend school daily and the number of teachers with more than 11 years of experience, in addition to increasing levels of teacher turnover and the percentage of inexperienced teachers (Dhuey & Smith, 2018). Dhuey and Smith (2018) also indicated that a principal with an advanced degree is associated with student performance in reading achievement. However, they did not find a significant impact on math achievement. However, some studies, such as Gumus et al. (2024), have shown no consistent evidence that a principal's years of experience or level of education has an impactful relationship with student achievement. Gumus et al. (2024) showed that a principal's prior school management experience has a small but significant association with student achievement. Dhuey and Smith (2018) explained that a principal's impact on student achievement is most likely related to the match between the principal and the school.

It is a known fact that teacher quality has a strong relationship with student achievement (Subiaur & Chen, 2021). On average, this relationship starts when a teacher has been teaching for approximately five years and tends to peak at a teacher's 14-year mark (Kukla-Acevedo, 2009). The amount teachers gain from their experiences is at its highest during their initial years of teaching and can often continue through the second and third decades of their careers. Despite all of this, including knowing that a teacher's competence positively affects student achievement, a known low correlation exists between teachers' experience and student achievement (Kocakaya & Kocakaya, 2014; Grajcevci & Shala, 2021). However, there are noticeable gains in African American students and students who perform above average in terms of years of teacher experience (Kukla-Acevedo, 2009). Higher-risk and chronically absent students tend to benefit most from more experienced teachers (Kini & Podolsky, 2016). Unfortunately, due to the equity gap in the world of education, students of color are more likely to be taught by inexperienced teachers. Underserved schools tend to have a high concentration of inexperienced teachers, even though these schools are the ones that need highly qualified teachers (Kini & Podolsky, 2016).

Various studies have produced mixed results regarding whether teacher attendance significantly impacts student achievement. One study showed that an additional ten days of teacher absences reduced student achievement by about 2% of a standard deviation (Tingle et al., 2012), but most studies have described small negative relationships between teacher absences and student achievement.

Most studies conclude that degree level is not a strong predictor of teacher effectiveness when measured by student achievement. Instead, the importance of advanced degrees seems to vary based on what someone teaches and who someone teaches; the largest impact of a teacher having an advanced degree appears to be in high school classrooms (Chang et al., 2020; Curry et

al., 2018). Roughly 56% of the United States public school teachers hold a master's degree or higher (Chang et al., 2020). One study showed that students of teachers who earned a master's degree performed significantly higher than students of teachers who earned a bachelor's degree (Curry et al., 2018). There seems to be a negative association between advanced degrees and elementary student achievement. This is likely due to most teachers in elementary school teaching multiple content areas instead of just focusing on one or two; specialized instruction that an advanced degree may provide would do little to improve elementary teachers' abilities to increase student achievement (Chen et al., 2020).

Higher management quality is associated with better educational outcomes (Bloom et al., 2015). Principal evaluations can represent a crucial strategy for improving schools, which may look like closing the achievement gap or increasing student achievement. The focus of principal evaluations has shifted from evaluating managerial skills to evaluating leadership skills. When school districts use evaluation processes that hold principals accountable, principals are more likely to engage in leadership behaviors, impacting student achievement by as much as 25% (McMahon, 2016). Principals typically complete teacher evaluations. A significant flaw in this system is that principals are typically only able to differentiate teachers' abilities at the tail ends of their evaluation distribution, and principals struggle to identify teachers at middle evaluation levels. Despite this, a positive relationship exists between student achievement and teacher evaluation scores based on ratings by peer evaluators and administrators (Kraft et al., 2019).

Classroom aides have a positive impact on student test scores. These positive impacts persist over time for disadvantaged students (Andersen et al., 2020). Currently, aides can also look like teaching assistants or co-teachers in the classroom. Regardless of their title, they can divide academic tasks within the classroom. In addition, the benefit of a co-teacher or teaching

assistant has been shown to significantly impact reading achievement. However, even though there is a positive impact on math achievement, that impact is insignificant (Farrell et al., 2010). There have been arguments made against the use of aides in the classroom, one study citing that "the more support pupils received, the less progress they made."

There are conflicting studies as to whether district expenditures impact academic achievement. For example, according to Mensah et al. (2013), there is no statistically significant relationship between per-pupil spending and academic achievement. However, a study by Subiaur and Chen (2021) stated that much of the data surrounding this topic was driven by researchers with political ties, which could have resulted in biased findings. They also stated that other researchers have found that district expenditure had significant effects. There is a bigger and more positive correlation between district expenditures and standardized test achievement with respect to population. Schools will increase their expenditures if they do not create policies addressing ecological equity. Addressing ecological equity will benefit low-SES students, increasing standardized test scores to some degree (Lamperez & Dereshiwsky, 2016).

Students can qualify for free or reduced lunches based on household income and family size. If a family's annual household income is at or below 130% of the federal poverty level, they are eligible for free meals. Students are eligible for reduced-price meals if a family's annual household income is between 130% and 185% of the federal poverty level (U.S. Department of Agriculture, 2019). Therefore, it is safe to assume that students from lower-SES families only enroll in the free and reduced lunch program. Based on this assumption, we can conclude that the free and reduced lunch program does not impact student achievement; it is a measurement for school administration to determine which students are from low-SES families (Domina et al., 2018).

Students tend to perform better in school districts that obtain most of their revenue locally, as opposed to students from school districts that obtain most of their revenue from the government (Mensah et al., 2013). One study showed that increased revenue results in increased expenditures, which could result in a minimal academic test increase over several years (Brunner et al., 2022). Another study, however, showed that increased revenue, and therefore increased expenditures, obviously positively impact student achievement, particularly in later grades. Further, this study showed an increase in college enrollment and an increase in college graduation (Kreisman & Steinberg, 2019).

High-quality cognitive and literary stimulation in early childhood is essential for later achievement (Tavassolie et al., 2022). To address this, the Obama administration implemented "Race to the Top," which led to the creation of Kindergarten Readiness Assessments (KRAs). These assessments provide a unique opportunity to better understand the emergence of literacy disparities (Herring et al., 2022). Kindergarten literacy skills, measured by KRAs, are strong predictors of third-grade reading scores. Students who are not reading at grade level by third grade are four times more likely to drop out of high school than their peers reading at grade level (Herring et al., 2022). Children who started school with below-average academic skills have been shown to sometimes perform over two standard deviations below their peers, proving that starting school with strong academic skills is vital for later achievement (Tavassolie et al., 2022). This is especially important for children from low-income backgrounds, who are already at a behavioral disadvantage due to factors they may deal with at home. Black, Hispanic, and low-income students are especially at risk of reading below grade level in third grade. White and more economically advantaged students are more likely to be proficient readers by third grade than their Black, Hispanic, and economically disadvantaged peers (Herring et al., 2022).

Chapter III. Methodology

This chapter introduces the research methodology for this quantitative study regarding the impact certain variables have on student achievement reported by ODE standardized tests. This approach allowed for a deeper understanding of the chosen variables and how they may impact student achievement. Data was collected from the ODE website and was analyzed using latent profile analysis.

Research Questions

1. Using Latent Profile Analysis, how many profiles were identified using context variables?
2. Using Latent Profile Analysis, how many profiles were identified using district variables?
3. How well do context variables and district variables predict school district performance indexes and value-added?

Research Design

This quantitative research study will be presented using latent profile analysis. A latent profile analysis aims to classify individual data into clusters based on their membership probabilities, which are estimated directly from the given model (Spurk et al., 2020). Using a latent profile analysis approach is most appropriate for this study because there is a large amount of data that needs to be analyzed. This study gathered quantified data from all school districts across Ohio and analyzed how specific demographic data may impact performance index and value-added throughout Ohio school districts.

Participants

The data collected from this study will be from school districts regarding their demographics, their students' demographics, and the results of students who have completed the Ohio Department of Education standardized tests during the 2021-2022 school year. The state of Ohio was chosen because it is the state where I currently reside and will be practicing upon graduation. Data will be collected on all school districts in Ohio during the 2021-2022 school year.

Instrumentation & Data Sources

This study will be conducted using existing data sources. I decided to analyze performance indexes and value-added data to determine precisely what it means to rate a school and discover how school districts in Ohio are being compared. I will use latent profile analysis to identify latent subpopulations (clusters) within a population based on the demographic data collected. I will then analyze these created clusters to establish the existence of all relationships between them. Using data required to be submitted by each school district to the Ohio Department of Education will further validate the accuracy of the data collected. It will also help validate the profiles that will arise via LPA.

This study used the reported Performance Indicators and Value-Added on ODE's Report Cards. The Report Cards include performance information collected from schools and districts. This information includes academic and financial information, as well as opportunities to learn data. Some of this data is combined into six different components that receive star ratings to determine the school and district's performance level. The Performance Indicators analyzed in this study are under the "Progress" component. These indicators show the percentage of students who have scored proficient or higher on the ODE standardized tests. These indicators clearly

indicate student achievement, as the percentages are based on the same rating scale (Ohio Department of Education, 2022).

Ohio School Demographics

Statewide school demographics were found on the Ohio Department of Education website. There were many categories given that I could analyze, and I chose a selection that describes Ohio school districts at contextual and district levels. Table 1 outlines this study's main relevant data points of average school district demographics for Ohio during the 2021-2022 school year. I will be breaking these data points down per school district. In addition to these main variables, I will break them down into more specific parameters as the data sees fit throughout my analyses.

Table 1

Statewide Averages of Variables

Variables	**State Averages**
% of Disadvantaged Students	46.66%
% of Students with a Disability	15.57%
Classroom Teacher Average Salary	$67,654.33
% of Teachers with 0-4 years of Experience	18.31%
% of Teachers with 4-10 years of Experience	20.04%
% of Teachers with 10+ years of Experience	61.65%
Administrator Average Salary	$86,982.26
Total Expenditure per Pupil	$13,386.70
Total Revenue per Pupil	$16,154.80

Note. Retrieved from Ohio Department of Education, 2021-b.

Data Collection Procedures

I will pull data directly from the Ohio Department of Education website. In addition, I will reach out to a member of ODE if needed to determine other data that may not be readily accessible, such as specific information about norming the ODE standardized tests. Specifically, I will begin by pulling data regarding the following demographic features per school district: (1) amount of economically disadvantaged students, (2) amount of students with disabilities per IDEA guidelines, (3) average administrator salary, (4) average classroom teacher salary, (5) average number of classroom teachers' years of experience, (6) district expenditures per pupil, and (7) district revenue per pupil. As data is found relevant throughout my research, it will be added to the overall analysis.

Data Analysis

Latent Profile Analysis (LPA) is a term used when referring to mixture modeling in which the indicators are numerical and continuous in their distribution. It avoids the "one size fits all" approach by using multiple indicators to identify homogenous subgroups within heterogeneous populations (Sinha et al., 2021).

Mixture modeling recovers hidden groups from observed data. The term "hidden groups" refers to the compilation of variables into different clusters that are not obvious when looking at the data. Figure 1 shows that each measure of achievement has multiple variables that may impact it. When discovering hidden variables, LPA will review all the specific data within the identified variables and pick out which specific ranges of data may correspond with other specific ranges of data with respect to each measure of achievement. For example, the analysis may find that a specific range of teacher salaries fits better with a certain range of disadvantaged students with respect to achievement differences. LPA allows you to obtain the probability that

each point of data belongs to one of the groups (Oberski, 2016). Mixture modeling is appropriate for this study because different groups of data were measured, but this study is searching for conclusions that consist of unobserved data. In addition, this study's data is best suited to an analysis such as LPA. According to Spurk et al. (2020), a sample size of at least 500 should be used when applying the LPA analysis to data. This study has over 600 "individuals," with over 10 variables each, so it meets the suggested "minimum of 500" criteria. Additionally, because the amount of data available varies each year, and some school districts no longer exist/have combined with others, analyzing the data via mixture modeling would help deal with those specific situations where some variables may be unobserved (Oberski, 2016).

Cluster Analysis is a commonly used person-centered (in this case, school district-centered) way to analyze data. Latent Class Analysis (LCA) and Latent Profile Analysis, both variants of Cluster Analysis, focus on measured units, not the variables themselves. LPA is considered an effective alternative to Cluster Analysis regarding strong validity evidence in research designs. It also provides an opportunity to categorize individuals from a heterogeneous population into homogenous subgroups based on the results of different continuous variables (Mammadov et al., 2016). Since this study's variables are continuous and not categorical, LPA is the better alternative to LCA because LCA only focuses on categorical variables.

Finite mixture modeling is a set of tools used to determine if unobserved or unmeasured groups exist within a population (Sinha et al., 2021). One such tool is Latent Class Analysis (LCA). This finite mixture modeling is where the observed indicators are all categorical. Another is Latent Profile Analysis (LPA), where the indicators are all numerical and continuous in their distribution (Sinha et al., 2021). Both LCA and LPA aim to recover hidden groups from observed data. However, they are more flexible than other clustering techniques because they are

based on an explicit data model and allow you to consider that the recovered groups are uncertain (Oberski, 2016). LPA attempts to recover hidden groups based on continuous observed variables, while LCA does the same but for categorical variables (Oberski, 2016). LPA is based on a statistical model; therefore, maximum likelihood estimates can be utilized to classify cases based on their probability of class membership (Mammadov et al., 2016). LPA focuses on profiles of individuals that share similar patterns of variables. LPA identifies these variables and compares them with other profiles of individuals, both regarding how variables combine to form the profiles of individuals and how the combinations are related to predictors and outcomes (Spurk et al., 2020). Because all data gathered in this study is numerical and continuous, LPA is the most appropriate tool to use for data analysis in this study. After clustering all variables, the clusters will be analyzed with respect to their impact on performance index and value-added measures per school district

Various profiles will be created when conducting LPA so the researcher can consider the best-fitting profile solution. When the researcher is deciding the best fitting and final profile solution, they must consider the theoretical and content-related considerations, as well as rely on statistical fit values. According to Spurk et al. (2020), there are four suggested decision steps when deciding on the final profile solution, and noted that the order of the given steps can be adapted to each individual study's needs:

1. Inspect estimation outputs for error messages, out-of-bound parameters, and theoretical plausibility
2. Compare remaining models using relative fit information criteria
3. Evaluate models with respect to confidence with which individuals have been classified as belonging to one group or another

4. Compare different likelihood ratio tests that quantify specific comparisons between the model of interests and a model with one fewer class

When analyzing different profiles created through LPA, one can consider how well the additional profiles can be discriminated from another that has already been chosen. If the additional profile adds a considerable new variable formation compared to the already-chosen profile(s), it may be beneficial to keep the new profile. However, if the additional profile is relatively similar to a profile that has already been chosen, one may not choose to keep the additional profile to avoid redundancy. It may also be beneficial to consider profile size when determining which profiles to keep for analysis. If a profile is comprised of just a small number of cases, justification will need to be made if the researcher decides to keep the profile. According to Spurk et al. (2020), a profile should be rejected if it includes less than one percent of the total sample size or is made up of fewer than 25 cases. It was also mentioned in the same article that the final chosen solution can be aligned to give the most meaningful solutions if a study is not considered exploratory. Since this study is considered exploratory, the best profiles will be chosen based on given fit indices after analyzing data. If profiles provide only partial support for fit criteria, some statistical values may need to be adjusted to create additional profiles to find the most appropriate fit. After deciding on a final profile solution, the researcher must inspect the content of single clusters and assign labels to them. There are no clear rules on how to label profiles. However, names may be directly related to the included indicators.

Assumptions

I assume all my data is mostly accurate, as it comes directly from reputable sources. The ODE scores are standardized and reported directly to the state. School demographic information is reported directly from data each school district collects. The number of economically

disadvantaged students is determined by the number of students enrolled in the free—and reduced-price lunch program, which could make this variable the one that is least accurate, as this is determined solely based on what families report to their school districts.

Chapter IV. Results

This chapter will discuss this study's purpose, research questions, data descriptions and characteristics of variables, and analysis and evaluation of latent profile analysis results. This study aimed to determine which Ohio school district variables may impact the performance index measure and value-added measure. The results of this exploratory latent profile analysis show that certain variables may have an impact on math and reading achievement, in addition to showing which combination of variables may be responsible for those impacts.

Instrument Validity and Reliability

The variables used in this study were sorted into Context profiles and District profiles. Tables 2 and 3 specify which variables were sorted into which profiles. Variables in the Context profile were student-centered variables, such as student enrollment and KRA achievement. Variables in the District profile were district-centered variables, such as the amount of teaching experience and the percentage of inexperienced principals.

Table 2
List of Context Variables

Variable	Variable Abbreviations
Enrollment – All Students	E_AS
Enrollment – Disabled Students	E_D
Enrollment – Economically Disadvantaged Students	E_ED
Enrollment – English Language Learner Students	E_ELL
Enrollment – Non-White Students	E_NW
KRA Overall Average Score	KRA_Avg
KRA Language & Literacy Average Score	KRA_LitAvg
Student Attendance	S_Atten
Student Chronic Absenteeism	S_Chronic
Number of Discipline Occurrences	Occur_D

Table 3
List of District Variables

Variable	Variable Abbreviations
Teacher Attendance Rate	T_AR
Teacher Average Salary	T_AS
General Education Teachers per 1000 Students	T_GE
Percent of Teachers with a Master's Degree	T_MA
Special Education Teachers per 1000 Students	T_SpEd
Teacher Years of Experience	T_YE
Percent of Inexperienced Teachers	T_IE
Number of Teacher Aides per 1000 Students	Aides
Administrator Average Salary	Ad_AS
Percent of Inexperienced Principals	P_IE
Percent of Principals with a Master's Degree	P_MA
Total Discipline Days	Days_D
Expenditures – Instruction	Instruction
Expenditures – Pupil Support	PupilSupport
Expenditures – Staff Support	StaffSupport
Expenditures – Administration	Administration
Expenditures – Operations Support	OperationsSupport

After completing the LPA on the data in R and running it through "tidylpa," four distinct models were determined to be the best fit for the data analyzed. Two of these models were classified

under “equal variances & covariances fixed to 0” (1), and two were classified under “equal variances & equal covariances” (3). The Context profile under Model 1 had ten classes, and the District profile under Model 1 had nine classes. In addition, the Context profile under Model 3 had seven classes, and the District profile under Model 3 had eight classes.

Research Question 1

The data collected from this study initially addressed the following research question: *Using Latent Profile Analysis, how many profiles were identified using context variables?* To answer this question, an analysis was conducted of 11 variables across 605 school districts in the state of Ohio. After running analyses through R, using the tidyLPA package, two distinct district profiles became apparent using the Bayesian Information Criterion (BIC) of fit, two distinct context profiles became apparent, one labeled Context Profile A and one labeled Context Profile B. Context Profile A consisted of 7 profiles, while Context Profile B consisted of 10 profiles. The means and standard deviations per each variable were calculated for each class in both profiles. The BIC fit differences between Context Profile A and Context Profile B and other profiles within each model in order by the number of profiles estimated can be found in Appendix E. The means and standard deviations for variables and classes in Context Profile A and Context Profile B are described in Appendix A.

After analyzing the created profiles from Context Profile A, we can come to several conclusions. Total student enrollment (E_AS) is significantly higher in profiles 4 and 6, indicating that these profiles represent groups with significantly higher populations. Enrollment of students with disabilities (E_D) is higher in profiles 4 and 6 and lower in profiles 2 and 7. Student attendance (S_Atten) has lower mean values in profiles 4 and 6, indicative of attendance issues or lower student attendance rates. Profiles 3 and 4 have higher disciplinary occurrences

(Occur_D), which could mean higher disciplinary occurrences across all students or students with disabilities. It does not appear there is a consistent pattern of Kindergarten Readiness Assessments (KRA_Avg and KRA_LitAvg) across Context Profile A.

Context Profile A Tables

Table 4
Context Profile A: Profile 1

Variable	Mean	Standard Deviation
Enrollment, All Students	1966.19	1600.07
Enrollment, Students with Disabilities	0.14	0.03
Enrollment, Students with Economic Disadvantage	0.28	0.11
Enrollment, English Language Learners	0.01	0.02
Enrollment, Non-White Students	0.11	0.07
KRA, Average Overall Score	266.88	4.04
KRA, Average Language and Literacy Score	265.08	4.09
Student Attendance Rate	93.06	1.55
Chronic Absenteeism Rate	19.78	7.45
Average Discipline Occurrences	28.85	21.78

Table 4 shows that Profile 1 of Context Profile A has an average enrollment of about 1966 students. Students with disabilities make an average of about 14% of total enrollment. Students who are economically disadvantaged make an average of about 28% of total enrollment, and students who are English language learners make an average of about 1% of total enrollment. In addition, non-white students make an average of about 11% of total enrollment. The average KRA score for Profile 1 is about 267, while the average KRA Language and Literacy score is about 265. The average student attendance rate for Profile 1 is about 93%,

while average chronic absenteeism accounts for about 20% of students. Finally, average number of discipline occurrences is approximately 29 across the 2021-2022 school year for Profile 1.

Table 5
Context Profile A: Profile 2

Variable	Mean	Standard Deviation
Enrollment, All Students	1524.00	987.5
Enrollment, Students with Disabilities	0.16	0.03
Enrollment, Students with Economic Disadvantage	0.48	0.12
Enrollment, English Language Learners	0.01	0.02
Enrollment, Non-White Students	0.11	0.07
KRA, Average Overall Score	264.68	4.59
KRA, Average Language and Literacy Score	262.54	4.88
Student Attendance Rate	90.07	1.61
Chronic Absenteeism Rate	37.47	7.80
Average Discipline Occurrences	44.06	3.65

Average student enrollment for Profile 2, as outlined in Table 5, is 1524 students. On average, students with disabilities make up approximately 16% of total enrollment, and students who are economically disadvantaged make up about 48% of total enrollment. English language learner students on average make up about 1% of total enrollment, and non-white students make an average of approximately 11% of total student enrollment. The average KRA score for Profile 2 is approximately 265, and the average KRA Language and Literacy score for Profile 2 is about 263. Average student attendance rate for Profile 2 is approximately 90%, and the average chronic absenteeism rate is about 37%. Finally, on average, there were about 44 discipline occurrences for Profile 2.

Table 6
Context Profile A: Profile 3

Variable	Mean	Standard Deviation
Enrollment, All Students	1873.11	1600.07
Enrollment, Students with Disabilities	0.13	0.03
Enrollment, Students with Economic Disadvantage	0.16	0.13
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.12	0.08
KRA, Average Overall Score	275.59	4.88
KRA, Average Language and Literacy Score	276.64	4.17
Student Attendance Rate	94.31	1.29
Chronic Absenteeism Rate	13.24	6.44
Average Discipline Occurrences	13.11	16.16

The average total student enrollment for Profile 3, as outlined in Table 6, was about 1873 students. Students with disabilities, on average, make up about 13% of total enrollment, while students who are economically disadvantaged, on average, make up about 16% of total enrollment. In addition, on average, students who are English language learners make up about 1% of total enrollment, while non-white students, on average, make up about 12% of total enrollment. The average KRA score for Profile 3 is approximately 276, while the average KRA Language and Literacy score is about 277. Average rate of student attendance in Profile 3 is about 94%, the average chronic absenteeism rate is about 13%, and average number of discipline occurrences is approximately 13.

Table 7
Context Profile A: Profile 4

Variable	Mean	Standard Deviation
Enrollment, All Students	7584.35	10987.78
Enrollment, Students with Disabilities	0.19	0.02
Enrollment, Students with Economic Disadvantage	0.93	0.13
Enrollment, English Language Learners	0.07	0.07
Enrollment, Non-White Students	0.81	0.13
KRA, Average Overall Score	259.40	3.95
KRA, Average Language and Literacy Score	257.24	4.37
Student Attendance Rate	86.09	3.36
Chronic Absenteeism Rate	47.95	10.16
Average Discipline Occurrences	159.71	75.16

Profile 4, outlined by Table 7, indicated that the average number of students enrolled was about 7584 students. Students with disabilities, on average, make up approximately 19% of total enrollment. Students who are economically disadvantaged made up about 93% of total enrollment, and students who are English language learners made up approximately 7% of total enrollment on average. In addition, non-white students made about 81% of total enrollment on average. The average KRA score for Profile 4 was about 259, while the average KRA Language and Literacy score was about 257. On average, the student attendance rate for Profile 4 was about 86%, the average rate of chronic absenteeism was approximately 48%, and the average number of discipline occurrences was about 160.

Table 8
Context Profile A: Profile 5

Variable	Mean	Standard Deviation
Enrollment, All Students	1845.31	1457.84
Enrollment, Students with Disabilities	0.18	0.04
Enrollment, Students with Economic Disadvantage	0.96	0.08
Enrollment, English Language Learners	0.01	0.02
Enrollment, Non-White Students	0.16	0.14
KRA, Average Overall Score	262.21	4.08
KRA, Average Language and Literacy Score	260.09	4.40
Student Attendance Rate	90.20	2.19
Chronic Absenteeism Rate	33.88	9.95
Average Discipline Occurrences	67.54	48.74

Table 8 specifies that Profile 5 had an average total enrollment of about 1845 students. Students with disabilities made up an average of about 18% of total enrollment, students with economic disadvantage averaged about 96% of total enrollment, and English language learner students made about 1% of total enrollment on average. In addition, non-white students, on average, made about 16% of total enrollment. The average KRA score for Profile 5 is about 262, while the average KRA Language and Literacy score for Profile 5 is about 260. The average attendance rate for Profile 5 was about 90%, the average rate of chronic absenteeism was approximately 34%, and the average number of discipline occurrences was about 68.

Table 9
Context Profile A: Profile 6

Variable	Mean	Standard Deviation
Enrollment, All Students	6765.82	5556.77
Enrollment, Students with Disabilities	0.15	0.03
Enrollment, Students with Economic Disadvantage	0.35	0.19
Enrollment, English Language Learners	0.06	0.04
Enrollment, Non-White Students	0.47	0.10
KRA, Average Overall Score	266.68	5.87
KRA, Average Language and Literacy Score	264.85	6.68
Student Attendance Rate	92.02	2.70
Chronic Absenteeism Rate	25.04	11.16
Average Discipline Occurrences	70.78	75.26

Profile 6, as outlined in Table 9, had an average student enrollment of about 6766 students. On average, about 15% of total enrollment is made of students with disabilities, about 35% is made of students with economic disadvantage, about 6% is made of English language learner students, and about 47% is made of non-white students. The KRA average score for Profile 6 was about 267, and the average KRA Language and Literacy score was about 265. The average student attendance rate is about 92%, the average rate of chronic absenteeism is about 25%, and the average number of discipline occurrences is about 71.

Table 10
Context Profile A: Profile 7

Variable	Mean	Standard Deviation
Enrollment, All Students	1291.39	1083.94
Enrollment, Students with Disabilities	0.20	0.03
Enrollment, Students with Economic Disadvantage	0.41	0.12
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.08	0.04
KRA, Average Overall Score	263.95	4.06
KRA, Average Language and Literacy Score	260.68	3.49
Student Attendance Rate	92.94	1.36
Chronic Absenteeism Rate	19.47	7.29
Average Discipline Occurrences	50.36	34.70

Profile 7, as outlined in Table 10, has an average student enrollment of about 1291 students. On average, about 20% of enrolled students were those with disabilities, about 41% were students with economic disadvantage, about 1% were English language learner students, and about 8% were non-white students. The average KRA score for Profile 7 was about 264 and the average KRA Language and Literacy score for Profile 7 was about 261. The average student attendance rate was approximately 93%, the average rate of chronic absenteeism was approximately 20%, and the average number of discipline occurrences was about 50.

Analysis of Context Profile B revealed that there is a wide variation in enrollment (E_AS) across profiles, the highest of 19,891.81 in profile four and the lowest of 1,490.35 in profile 5, indicating that there are significant differences in student population sizes across profiles. There are also variations in enrollment of students with disabilities (E_D) across profiles; particularly, profiles 2 and 9 have relatively high values compared to others. Profiles 4

and 8 show higher enrollment of economically disadvantaged students (E_ED), while profile 6 had an unusually low value compared to others. The profiles also indicate that there are varying levels of enrollment for ELL students (E_ELL) across profiles, with profiles 4 and 9 having relatively high values. Profile 2 has a significantly higher enrollment of non-white students (E_NW) than the other profiles. There were no significant differences in KRA averages across profiles. Profile 4 has a higher percentage of students with chronic absences (S_Chronic). Finally, profiles 4 and 8 show a higher occurrence of discipline issues than other profiles, which could indicate possible behavioral challenges.

Context Profile B Tables

Table 11
Context Profile B: Profile 1

Variable	Mean	Standard Deviation
Enrollment, All Students	1574.19	1170.40
Enrollment, Students with Disabilities	0.15	0.03
Enrollment, Students with Economic Disadvantage	0.33	0.10
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.10	0.08
KRA, Average Overall Score	263.78	2.29
KRA, Average Language and Literacy Score	261.66	2.38
Student Attendance Rate	93.08	0.86
Chronic Absenteeism Rate	19.83	4.78
Average Discipline Occurrences	34.51	23.33

Profile 1 of Context Profile B, as outlined in Table 11, has a total enrollment average of about 1574 students. Students with disabilities, on average, made up about 15% of total enrollment, and students with economic disadvantage made up about 33%, on average, of total

enrollment. English language learner students made an average of about 1% of total enrollment, and non-white students made an average of approximately 10% of total enrollment. The average KRA score for Profile 1 was about 264, while the average KRA Language and Literacy score was about 262. The average student attendance rate for Profile 1 was about 93%, the average chronic absenteeism rate was approximately 20%, and the average number of discipline occurrences was about 35.

Table 12
Context Profile B: Profile 2

Variable	Mean	Standard Deviation
Enrollment, All Students	3108.44	2214.21
Enrollment, Students with Disabilities	0.17	0.02
Enrollment, Students with Economic Disadvantage	0.56	0.12
Enrollment, English Language Learners	0.05	0.03
Enrollment, Non-White Students	0.58	0.20
KRA, Average Overall Score	262.26	3.42
KRA, Average Language and Literacy Score	259.74	4.59
Student Attendance Rate	89.97	1.51
Chronic Absenteeism Rate	34.63	6.62
Average Discipline Occurrences	13.11	16.16

Profile 2, described in Table 12, had an average student enrollment of approximately 3108 students. On average, about 17% of total enrolled students were those with disabilities, about 56% of those had an economic disadvantage, about 5% of those were English language learners, and about 58% of those students were reported to be non-white. The average KRA score for Profile 2 was about 262, and the average KRA Language and Literacy score was about 250. The average student attendance rate was approximately 90%, the average chronic

absenteeism rate was about 35%, and the average number of discipline occurrences was approximately 13.

Table 13
Context Profile B: Profile 3

Variable	Mean	Standard Deviation
Enrollment, All Students	1900.81	1501.81
Enrollment, Students with Disabilities	0.15	0.03
Enrollment, Students with Economic Disadvantage	0.36	0.10
Enrollment, English Language Learners	0.01	0.02
Enrollment, Non-White Students	0.11	0.10
KRA, Average Overall Score	267.75	2.59
KRA, Average Language and Literacy Score	266.21	2.82
Student Attendance Rate	91.28	0.78
Chronic Absenteeism Rate	29.58	4.20
Average Discipline Occurrences	42.56	24.46

Profile 3, outlined in Table 13, has an average enrollment of about 1901 students. On average, students with disabilities make up about 15% of total enrollment, students with economic disadvantage make up about 36% of total enrollment, students who are English language learners make up about 1% of total enrollment, and students who are non-white make up about 11% of total enrollment. The average KRA score for Profile 3 is about 268, and the average KRA Language and Literacy score is about 266. The average student attendance rate for Profile 3 is about 91%, average chronic absenteeism rate is about 30%, and average number of discipline occurrences is about 43.

Table 14
Context Profile B: Profile 4

Variable	Mean	Standard Deviation
Enrollment, All Students	19891.89	15904.70
Enrollment, Students with Disabilities	0.17	0.02
Enrollment, Students with Economic Disadvantage	0.88	0.18
Enrollment, English Language Learners	0.15	0.06
Enrollment, Non-White Students	0.77	0.13
KRA, Average Overall Score	258.53	3.22
KRA, Average Language and Literacy Score	255.71	3.99
Student Attendance Rate	85.19	3.24
Chronic Absenteeism Rate	50.06	8.99
Average Discipline Occurrences	148.70	61.21

Profile 4, displayed in Table 14, has an average total student enrollment of about 19892 students. The average enrollment percentage of students with disabilities is about 17%, students with economic disadvantage is approximately 88%, English language learners is about 15%, and non-white students is about 77%. The average KRA overall score for Profile 4 is about 259, while the average KRA Language and Literacy score is about 256. The average student attendance rate is approximately 85%, rate of chronic absenteeism is about 50%, and the average number of discipline occurrences is about 149.

Table 15
Context Profile B: Profile 5

Variable	Mean	Standard Deviation
Enrollment, All Students	1490.35	874.11
Enrollment, Students with Disabilities	0.19	0.03
Enrollment, Students with Economic Disadvantage	0.95	0.08
Enrollment, English Language Learners	0.003	0.01
Enrollment, Non-White Students	0.12	0.12
KRA, Average Overall Score	262.31	4.25
KRA, Average Language and Literacy Score	260.18	4.55
Student Attendance Rate	90.66	10.80
Chronic Absenteeism Rate	32.36	9.35
Average Discipline Occurrences	55.87	41.11

Table 15 describes Profile 5 in Context Profile B. Profile 5 has an average student enrollment of approximately 1490 students. The average percentage enrollment of students with disabilities is about 19%, students with economic disadvantage is about 95%, students who are English language learners is about 0.3%, and students who are non-white is about 12%. The average KRA overall score for Profile 5 is about 262, and the average KRA Language and Literacy overall score is about 260. The average student attendance rate is about 91%, rate of chronic absenteeism is approximately 32%, and number of discipline occurrences is about 56.

Table 16
Context Profile B: Profile 6

Variable	Mean	Standard Deviation
Enrollment, All Students	2510.04	3242.67
Enrollment, Students with Disabilities	0.11	0.03
Enrollment, Students with Economic Disadvantage	0.09	0.06
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.13	0.11
KRA, Average Overall Score	277.57	3.27
KRA, Average Language and Literacy Score	277.66	3.52
Student Attendance Rate	94.89	1.01
Chronic Absenteeism Rate	10.05	4.28
Average Discipline Occurrences	7.26	7.68

Profile 6, outlined in Table 16, has an average enrollment of about 2510 students. The average percent enrollment of students with disabilities is about 11%, and the average percent enrollment of students with an economic disadvantage is about 9%. In addition, the average percent enrollment of students who are English language learners are about 1%, and students who are non-white is about 13%. The average KRA score for Profile 6 is about 278, and the average KRA Language and Literacy score is about 278. The average student attendance rate is approximately 95%, the average rate of chronic absenteeism is about 10%, and the average number of discipline occurrences is about 7.

Table 17
Context Profile B: Profile 7

Variable	Mean	Standard Deviation
Enrollment, All Students	2126.86	1818.17
Enrollment, Students with Disabilities	0.13	0.03
Enrollment, Students with Economic Disadvantage	0.21	0.08
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.12	0.09
KRA, Average Overall Score	270.22	2.65
KRA, Average Language and Literacy Score	268.92	2.68
Student Attendance Rate	94.03	1.13
Chronic Absenteeism Rate	14.96	5.40
Average Discipline Occurrences	18.64	13.61

Profile 7, outlined in Table 17, has an average enrollment of about 2127 students. The average percent enrollment of students with disabilities is about 13%, students with economic disadvantage is about 21%, students who are English language learners is about 1%, and students who are non-white is about 12%. The overall average KRA score for Profile 7 is about 270, and the overall average KRA Language and Literacy score is about 269. The average rate of student attendance is about 94%, the average rate of chronic absenteeism is about 15%, and the average number of discipline occurrences is about 19.

Table 18
Context Profile B: Profile 8

Variable	Mean	Standard Deviation
Enrollment, All Students	3970.93	3995.98
Enrollment, Students with Disabilities	0.19	0.03
Enrollment, Students with Economic Disadvantage	0.98	0.04
Enrollment, English Language Learners	0.03	0.03
Enrollment, Non-White Students	0.67	0.24
KRA, Average Overall Score	259.01	4.24
KRA, Average Language and Literacy Score	257.14	4.29
Student Attendance Rate	86.01	2.93
Chronic Absenteeism Rate	49.20	8.85
Average Discipline Occurrences	165.23	72.27

The average enrollment for Profile 8, outlined in Table 18, is approximately 3971 students. The average percent of enrollment of students with disabilities is about 19%, and the average enrollment of students with an economic disadvantage is about 98%. In addition, the average percent of enrollment of students who are English language learners is about 3%, and the average percent of enrollment of students who are non-white is approximately 67%. The average overall KRA score for Profile 8 is about 259, while the average KRA Language and Literacy score is about 257. The average rate of student attendance is approximately 86%, average rate of chronic absenteeism is about 49%, and the average number of discipline occurrences is approximately 165.

Table 19
Context Profile B: Profile 9

Variable	Mean	Standard Deviation
Enrollment, All Students	8498.25	5147.91
Enrollment, Students with Disabilities	0.13	0.03
Enrollment, Students with Economic Disadvantage	0.29	0.15
Enrollment, English Language Learners	0.12	0.04
Enrollment, Non-White Students	0.41	0.21
KRA, Average Overall Score	267.18	4.89
KRA, Average Language and Literacy Score	265.23	5.45
Student Attendance Rate	93.11	2.21
Chronic Absenteeism Rate	19.73	8.20
Average Discipline Occurrences	65.09	105.62

Profile 9 has an average enrollment of about 8498 students, as shown in Table 19. The average amount of students with disabilities enrolled is approximately 13%, students with economic disadvantage is about 29%, students who are English language learners is about 12%, and students who are non-white is about 41%. The average KRA score is 267, while the average KRA Language and Literacy score is about 265. The average student attendance rate for Profile 9 is about 93%, chronic absenteeism is about 20%, and number of discipline occurrences is approximately 65.

Table 20
Context Profile B: Profile 10

Variable	Mean	Standard Deviation
Enrollment, All Students	2048.43	1618.57
Enrollment, Students with Disabilities	0.17	0.03
Enrollment, Students with Economic Disadvantage	0.50	0.10
Enrollment, English Language Learners	0.01	0.01
Enrollment, Non-White Students	0.14	0.09
KRA, Average Overall Score	262.21	2.61
KRA, Average Language and Literacy Score	259.84	2.50
Student Attendance Rate	89.72	1.57
Chronic Absenteeism Rate	37.47	7.23
Average Discipline Occurrences	51.22	27.34

The average student enrollment for Profile 10, as outlined in Table 20, is about 2048. The average percent enrollment of students with disabilities is about 17%, students with economic disadvantage is about 50%, students who are English language learners is about 1%, and students who are non-white is about 14%. The average overall KRA score is about 262, and the average KRA Language and Literacy score is about 260. The average student attendance rate is about 90%, average rate of chronic absenteeism is about 37%, and average number of discipline occurrences is about 51.

To add more context to the impact of profiles on presented variables, an ANOVA was run on each variable to determine how much variance can be explained by the differences between profiles in Context Profile A and Context Profile B. These charts can be found in Appendix C. Results that stood out were 81% of the variance in Non-White student enrollment can be explained between the seven profiles in Context Profile A, as well as 53% of the variance

in overall student attendance and 56% of the variance in student chronic absence. Approximately 89% of the variance in economically disadvantaged student enrollment can be explained between the ten profiles in Context Profile B, as well as 67% of the variance in ELL student enrollment, 68% of the variance in Non-White enrollment, between 72% and 75% of the variance in KRA average scores, 74% of the variance in student attendance, 76% of the variance in student chronic absence, and 53% of the variance in discipline occurrences.

Research Question 2

After obtaining the results for the first research question, I could answer my second research question: *Using Latent Profile Analysis, how many profiles were identified using district variables?* LPA was conducted on 17 different variables to answer this question. After running analyses through R using the same methodology and measures of fit as the Context analysis, two models were identified: District Profile A and District Profile B. District Profile A consisted of 8 profiles, while District Profile B consisted of 9 profiles. The BIC fit differences between District Profile A and District Profile B and other profiles within each model in order by the number of profiles estimated can be found in Appendix E. The means and standard deviations for variables and classes in District Profile A and District Profile B are outlined in Appendix B.

Profiles outlined in District Profile A indicated that profiles 1 through 6 have higher teacher attendance rates, while profiles 7 and 8 show significantly lower teacher attendance rates. In addition, profile 3 showed the highest average salary for teachers; profiles 6 and 7 have lower average salaries than others. Profile 5 has the highest ratio of general education teachers per student, while profiles 6 and 7 have lower ratios. Profile 6 shows a significantly higher ratio of special education teachers per student. Profiles 2 and 3 have a higher percentage of teachers with at least a Master's degree, and profiles 1 and 8 show a higher level of teacher inexperience

compared to other profiles. Profile 5 has the highest number of classroom aides per student, but profiles 6 and 7 have the lowest ratio of aides per student. Profile 6 has the highest average salary for administrators, and profile 7 has the lowest average administrator salary. Profile 8 has a notably higher percentage of inexperienced principals compared to other profiles, and profiles 4 and 8 have a higher percentage of principals with at least a Master's degree—profiles 4 and 8 show significantly higher reported days of discipline than other profiles. Profiles 4 and 5 have higher instructional expenditures compared to other profiles; profile 4 has the highest pupil support and staff support expenditures compared to other profiles, and profile 6 has notably higher administration expenditures compared to other profiles. In addition, profiles 5 and 6 have higher operations support expenditures than others.

District Profile A Tables

Table 21
District Profile A: Profile 1

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.95	0.01
Teacher Average Salary	53623.56	9469.02
General Education Teachers per 1000 Students	54.69	7.76
Special Education Teachers per 1000 Students	14.69	8.89
Average Years of Teaching Experience	10.60	2.23
Teachers with a Master's Degree	0.52	0.09
Inexperienced Teachers	0.28	0.04
Aides per 1000 Students	12.75	10.04
Administrator Average Salary	81652.52	10011.37
Inexperienced Principals	0.27	0.27
Principals with a Master's Degree	0.95	0.07
Total Days of Discipline	17.51	12.72
Expenditures Contributing to Instruction	7893.27	1223.24
Expenditures Contributing to Pupil Support	904.33	331.40
Expenditures Contributing to Staff Support	494.80	194.02
Expenditures Contributing to Administration	1820.67	475.34
Expenditures Contributing to Operations Support	2584.53	683.27

Profile 1 in District Profile A, as shown in Table 21, has an average teacher attendance rate of about 95%. The average salary for a teacher is about $53,624. There are, on average, about 55 general education teachers per 1000 students, and 15 special education teachers per 1000 students. The average amount of teaching experience in Profile 1 is about 11 years. The average percent of teachers with a master's degree is about 52%, and the average amount of inexperienced teachers is about 28%. The average number of aides per 1000 students is about 13. Administrator average salary per Profile 1 is about $81,653. Profile 1 has an average of about

27% of inexperienced principals, and about 95% of principals on average have a master's degree. On average, Profile 1 has about 18 total days of discipline. Average expenditures on instruction is about $7,893, expenditures on pupil support is about $904, and expenditures on staff support is about $495. Average expenditures on administration is about $1,821, and expenditures for operations support is approximately $2,585.

Table 22
District Profile A: Profile 2

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	63331.16	6395.17
General Education Teachers per 1000 Students	47.00	5.80
Special Education Teachers per 1000 Students	12.66	3.91
Average Years of Teaching Experience	15.38	2.48
Teachers with a Master's Degree	0.64	0.11
Inexperienced Teachers	0.08	0.05
Aides per 1000 Students	10.36	6.48
Administrator Average Salary	83460.65	13349.70
Inexperienced Principals	0.15	0.18
Principals with a Master's Degree	0.89	0.05
Total Days of Discipline	10.63	9.58
Expenditures Contributing to Instruction	7795.75	1009.37
Expenditures Contributing to Pupil Support	806.01	268.21
Expenditures Contributing to Staff Support	398.54	218.94
Expenditures Contributing to Administration	1722.91	372.98
Expenditures Contributing to Operations Support	2596.68	609.30

Profile 2, as described in Table 22, has an average teacher attendance rate of about 94%, and an average teacher salary of approximately $63,331. On average, there are about 47 general

education teachers per 1000 students, and about 13 special education teachers per 1000 students. Profile 2 has an average of about 15 years of teaching experience, about 64% of teachers who have a master's degree, and about 8% of inexperienced teachers. In addition, Profile 2 has about 10 aides per 1000 students. The average administrator salary is approximately $83,461. Profile 2 has an average of about 15% of inexperienced principals, and about 89% of principals with a master's degree. In addition, there is an average of about 11 total discipline days for Profile 2. Average expenditures on instruction amounted to about $7,796, expenditures on pupil support is about $806, and expenditures on staff support is about $399. Finally, average expenditures on administration is about $1,723, and expenditures for operations support is about $2,597.

Table 23
District Profile A: Profile 3

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	81228.26	4514.18
General Education Teachers per 1000 Students	46.95	4.62
Special Education Teachers per 1000 Students	11.78	2.57
Average Years of Teaching Experience	15.93	2.79
Teachers with a Master's Degree	0.76	0.08
Inexperienced Teachers	0.06	0.04
Aides per 1000 Students	12.35	7.76
Administrator Average Salary	105089.49	12089.87
Inexperienced Principals	0.12	0.16
Principals with a Master's Degree	0.98	0.05
Total Days of Discipline	7.61	7.07
Expenditures Contributing to Instruction	9298.44	1124.00
Expenditures Contributing to Pupil Support	1058.61	239.97
Expenditures Contributing to Staff Support	491.47	240.50
Expenditures Contributing to Administration	1928.46	439.45
Expenditures Contributing to Operations Support	2586.44	590.91

Table 23 indicated that Profile 3 has an average teacher attendance rate of about 94%, and an average teacher salary of about $81,228. The average number of general education teachers per 1000 students is about 47, and the average number of special education teachers per 1000 students is about 12. The average amount of teaching experience in Profile 3 is about 16 years, the average amount of teachers with a master's degree is about 76%, and the average amount of inexperienced teachers is about 6%. The average number of aides per 1000 students in Profile 3 is about 12. The average administrator salary in Profile 3 is about $105,089. The

average amount of inexperienced principals is about 12%, and average amount of principals with a master's degree is about 98%. In addition, the average number of discipline days is about 8. Average expenditures related to instruction is about $9,298, expenditures related to pupil support is about $1,059, and expenditures related to staff support is about $491. Average expenditures related to administration is about $1,928, and expenditures related to operations support is about $2,586.

Table 24

District Profile A: Profile 4

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.93	0.02
Teacher Average Salary	65837.43	8292.45
General Education Teachers per 1000 Students	48.49	6.68
Special Education Teachers per 1000 Students	17.00	4.09
Average Years of Teaching Experience	13.36	2.54
Teachers with a Master's Degree	0.59	0.09
Inexperienced Teachers	0.11	0.07
Aides per 1000 Students	16.00	7.02
Administrator Average Salary	92885.54	12757.48
Inexperienced Principals	0.29	0.23
Principals with a Master's Degree	0.95	0.08
Total Days of Discipline	68.45	22.00
Expenditures Contributing to Instruction	9385.18	1721.37
Expenditures Contributing to Pupil Support	1409.36	529.17
Expenditures Contributing to Staff Support	878.00	380.84
Expenditures Contributing to Administration	2446.86	658.09
Expenditures Contributing to Operations Support	3332.05	579.69

The average rate of teacher attendance in Profile 4, as described in Table 24, is about 93%, and the average teacher salary is about $65,837. The average number of general education teachers is about 48 per 1000 students, and the average number of special education teachers is about 17 per 1000 students. The average amount of teaching experience is about 13 years, average amount of teachers with a master's degree is about 59%, and average amount of inexperienced teachers is about 11%. On average, Profile 4 has about 16 aides per 1000 students. The average administrator salary is about $92,886. On average, about 29% of principals are inexperienced, and about 95% of principals have a master's degree. In addition, there is an average of about 68 discipline days. Expenditures contributing to instruction on average are about $9,385, average expenditures contributing to pupil support are about $1,409, and average expenditures contributing to staff support are about $878. Expenditures contributing to administration on average are about $2,447, and average expenditures contributing to operations support are about $3,332.

Table 25
District Profile A: Profile 5

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.02
Teacher Average Salary	79020.31	13231.37
General Education Teachers per 1000 Students	61.33	10.07
Special Education Teachers per 1000 Students	12.39	4.30
Average Years of Teaching Experience	16.42	3.09
Teachers with a Master's Degree	0.75	0.14
Inexperienced Teachers	0.04	0.03
Aides per 1000 Students	27.02	10.04
Administrator Average Salary	95629.40	16946.76
Inexperienced Principals	0.25	0.25
Principals with a Master's Degree	1.00	0.00
Total Days of Discipline	7.27	6.97
Expenditures Contributing to Instruction	11526.92	1694.43
Expenditures Contributing to Pupil Support	1275.75	412.92
Expenditures Contributing to Staff Support	1084.08	744.04
Expenditures Contributing to Administration	2788.83	518.98
Expenditures Contributing to Operations Support	3096.33	973.93

Profile 5, as described in Table 25, has an average teacher attendance rate of about 94%, and an average teacher salary of about $79,020. There are about 61 general education teachers per 1000 students and about 12 special education teachers per 1000 students. The average amount of teaching experience for Profile 5 is about 16 years. The average amount of teachers with a master's degree is about 75%, and the average amount of inexperienced teachers is about 4%. There are, on average, about 27 aides per 1000 students. The average administrator salary for Profile 5 is about $95,629, average amount of inexperienced principals is about 25%, and

average amount of principals with a master's degree is 100%. In addition, there are an average of 7 total discipline days. Average expenditures contributing to instruction are about $11,527, expenditures contributing to pupil support are about $1,276, and expenditures contributing to staff support are about $1,084. Finally, average expenditures in Profile 5 contributing to administration are about $2,789, and average expenditures contributing to operations support are about $3,096.

Table 26

District Profile A: Profile 6

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.02
Teacher Average Salary	60722.45	10243.51
General Education Teachers per 1000 Students	32.45	10.72
Special Education Teachers per 1000 Students	11.85	7.63
Average Years of Teaching Experience	13.60	3.17
Teachers with a Master's Degree	0.63	0.17
Inexperienced Teachers	0.07	0.07
Aides per 1000 Students	7.30	6.84
Administrator Average Salary	77549.03	10280.17
Inexperienced Principals	0.05	0.10
Principals with a Master's Degree	0.97	0.06
Total Days of Discipline	12.58	9.82
Expenditures Contributing to Instruction	9951.30	1558.85
Expenditures Contributing to Pupil Support	1142.60	568.11
Expenditures Contributing to Staff Support	534.30	341.36
Expenditures Contributing to Administration	4301.50	1104.72
Expenditures Contributing to Operations Support	4214.70	1637.80

The average teacher attendance rate for Profile 6, as outlined in Table 26, is about 94%, and the average teacher salary is about $60,722. The average number of general education teachers per 1000 students is about 32, and the average number of special education teachers per 1000 students is about 12. The average amount of teaching experience is about 14 years, average amount of teachers with a master's degree is about 63%, and the average amount of inexperienced teachers is about 7%. There are, on average, about 7 aides per 1000 students. The average administrator salary for Profile 6 is about $77,549, average amount of inexperienced principals is about 5%, and average amount of principals with a master's degree is about 97%. There is an average of about 13 total days of discipline. Expenditures contributing to instruction, on average, is about $9,951, expenditures contributing to pupil support is about $1,143, and expenditures contributing to staff support is about $534. In addition, expenditures contributing to administration, on average, is about $4,302, and expenditures contributing to operations support is about $4,215.

Table 27
District Profile A: Profile 7

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	58283.44	6210.03
General Education Teachers per 1000 Students	32.18	6.87
Special Education Teachers per 1000 Students	7.06	4.04
Average Years of Teaching Experience	16.18	3.33
Teachers with a Master's Degree	0.60	0.14
Inexperienced Teachers	0.09	0.06
Aides per 1000 Students	6.47	6.65
Administrator Average Salary	76323.73	15256.81
Inexperienced Principals	0.20	0.29
Principals with a Master's Degree	1.00	0.02
Total Days of Discipline	5.53	7.76
Expenditures Contributing to Instruction	8904.82	1408.69
Expenditures Contributing to Pupil Support	782.89	312.81
Expenditures Contributing to Staff Support	472.69	315.08
Expenditures Contributing to Administration	2314.52	481.25
Expenditures Contributing to Operations Support	2979.89	808.61

Profile 7, outlined in Table 27, has an average teacher attendance rate of approximately 94%, and an average teacher salary of about $58,283. There are an average of about 32 general education teachers per 1000 students, and an average of about 7 special education teachers per 1000 students. Profile 7 has an average of about 16 years of teaching experience, has an average of about 60% of teachers with a master's degree, and an average of about 9% of inexperienced teachers. There are an average of about 6 aides per 1000 students. The average administrator salary is about $76,324, average amount of inexperienced principals is about 20%, and an

average of about 100% of principals with a master's degree. In addition, there is an average of 6 total discipline days. On average, about $8,905 of expenditures contribute to instruction, about $783 of expenditures contribute to pupil support, and about $473 of expenditures contribute to staff support. Finally, on average, about $2,315 of expenditures contribute to administration, and about $2,980 of expenditures contribute to operations support.

Table 28
District Profile A: Profile 8

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	60979.91	7235.28
General Education Teachers per 1000 Students	45.35	8.18
Special Education Teachers per 1000 Students	11.79	3.78
Average Years of Teaching Experience	14.60	2.70
Teachers with a Master's Degree	0.56	0.12
Inexperienced Teachers	0.10	0.06
Aides per 1000 Students	8.64	6.37
Administrator Average Salary	81245.60	12685.58
Inexperienced Principals	0.30	0.27
Principals with a Master's Degree	0.61	0.13
Total Days of Discipline	11.16	10.83
Expenditures Contributing to Instruction	8041.22	1136.44
Expenditures Contributing to Pupil Support	772.38	266.54
Expenditures Contributing to Staff Support	423.56	238.47
Expenditures Contributing to Administration	1877.95	389.82
Expenditures Contributing to Operations Support	2779.11	713.83

Profile 8, as outlined by Table 28, has an average teacher attendance rate of about 94%, and an average teacher salary of about $60,980. There are an average of about 45 general

education teachers per 1000 students, and an average of about 12 special education teachers per 1000 students. Additionally, Profile 8 has an average of about 15 years of teaching experience, has an average of about 56% of teachers with a master's degree, and an average of about 10% of inexperienced teachers. There is also an average of about 9 aides per 1000 students. The average administrator salary is about $81,246, the average amount of inexperienced principals is about 30%, and the average amount of principals with a master's degree is about 61%. In addition, there is an average of about 11 total days of discipline. On average, about $8,041 of expenditures are contributed to instruction, about $772 of expenditures are contributed to pupil support, and about $424 are contributed to staff support. Also, about $1,878 of expenditures are contributed to administration, and about $2,779 of expenditures are contributed to operations support.

Looking at District Profile B, profiles 2, 5, 6, 7, and 8 all have relatively higher teacher attendance rates compared to other profiles. Profile 3 shows the highest average salary for teachers, while profiles 1, 6, and 7 have the lowest average salaries. Profiles 5 and 1 have the highest ratios of general education teachers per student, and profile 4 has the highest ratio of special education teachers per student. Profiles 3 and 8 have a higher percentage of teachers with at least a Master's degree compared to other profiles, and profiles 2 and 8 have a higher percentage of inexperienced teachers. Profile 4 has the highest number of aides per student. Profiles 3 and 5 have the highest average salary for administrators, and profiles 2 and 9 have a higher percentage of inexperienced principals compared to other profiles. In addition, profiles 4, 5, and 8 have a higher percentage of principals with at least a Master's degree compared to other profiles. Profiles 4 and 8 show higher reported days of discipline compared to other profiles. Finally, Instructional expenditures, Pupil Support expenditures, Staff Support expenditures,

Administration expenditures, and Operations Support expenditures show variations across all profiles.

District Profile B Tables

Table 29
District Profile B: Profile 1

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.93	0.01
Teacher Average Salary	60455.37	4736.60
General Education Teachers per 1000 Students	50.57	6.44
Special Education Teachers per 1000 Students	15.19	3.57
Average Years of Teaching Experience	14.61	1.75
Teachers with a Master's Degree	0.59	0.10
Inexperienced Teachers	0.08	0.04
Aides per 1000 Students	12.62	7.11
Administrator Average Salary	79777.81	12690.74
Inexperienced Principals	0.14	0.18
Principals with a Master's Degree	0.98	0.05
Total Days of Discipline	15.15	13.07
Expenditures Contributing to Instruction	8614.40	950.72
Expenditures Contributing to Pupil Support	894.93	260.87
Expenditures Contributing to Staff Support	496.57	342.27
Expenditures Contributing to Administration	1972.30	427.45
Expenditures Contributing to Operations Support	2955.70	629.13

Table 29 indicates that Profile 1 of District Profile B has an average teacher attendance rate of about 93%, and that the average teacher salary is about $60,455. On average, there are about 51 general education teachers per 1000 students and an average of about 15 special education teachers per 1000 students. The average amount of teaching experience is about 15

years, the average number of teachers with a master's degree is approximately 59%, and there are about 8% of inexperienced teachers on average. Additionally, there are about 13 aides per 1000 students in Profile 1. The average administrator salary is approximately $79,778, the average number of inexperienced principals is about 14%, and the average number of principals with a master's degree is about 98%. On average, there are a total of about 15 discipline days. Approximately, an average of $8,614 of expenditures is contributed to instruction, an average of $895 of expenditures is contributed to pupil support, and an average of $497 is contributed to staff support. Additionally, an average of about $1,972 of expenditures is contributed to administration, and an average of about $2,956 of expenditures is contributed to operations support.

Table 30
District Profile B: Profile 2

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	55747.66	7547.67
General Education Teachers per 1000 Students	47.13	8.04
Special Education Teachers per 1000 Students	13.04	4.60
Average Years of Teaching Experience	11.60	2.01
Teachers with a Master's Degree	0.53	0.10
Inexperienced Teachers	0.18	0.07
Aides per 1000 Students	9.81	6.70
Administrator Average Salary	80557.04	11436.87
Inexperienced Principals	0.31	0.29
Principals with a Master's Degree	0.97	0.07
Total Days of Discipline	11.51	10.22
Expenditures Contributing to Instruction	7337.60	798.98
Expenditures Contributing to Pupil Support	723.20	219.68
Expenditures Contributing to Staff Support	410.80	206.29
Expenditures Contributing to Administration	1794.33	440.87
Expenditures Contributing to Operations Support	2572.63	669.81

Profile 2, as outlined by Table 30, has an average teacher attendance rate of about 94%, and an average teacher salary of about $55,748. Additionally, on average, there are about 47 general education teachers per 1000 students and about 13 special education teachers per 1000 students. Profile 2 has an average of approximately 12 years of teaching experience, has an average of about 53% of its teachers with a master's degree, and has an average of about 18% inexperienced teachers. There is also an average of about 10 aides per 1000 students. The average administrator salary is about $80,557, the average amount of inexperienced principals is

about 31%, and on average about 97% of principals have a master's degree. There is an average of about 12 total discipline days. An average of about $7,338 of expenditures contributes to instruction, an average of about $723 of expenditures contributes to pupil support, and an average of about $411 of expenditures contributes to staff support. Finally, an average of about $1,794 of expenditures contributes to administration, and an average of about $2,573 of expenditures contributes to operations support.

Table 31

District Profile B: Profile 3

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	77824.52	4836.26
General Education Teachers per 1000 Students	44.98	4.27
Special Education Teachers per 1000 Students	12.39	2.67
Average Years of Teaching Experience	15.83	2.62
Teachers with a Master's Degree	0.75	0.07
Inexperienced Teachers	0.06	0.04
Aides per 1000 Students	13.09	6.52
Administrator Average Salary	103081.88	9691.97
Inexperienced Principals	0.13	0.17
Principals with a Master's Degree	0.98	0.04
Total Days of Discipline	10.70	9.79
Expenditures Contributing to Instruction	8719.44	782.52
Expenditures Contributing to Pupil Support	1025.12	214.00
Expenditures Contributing to Staff Support	433.01	177.09
Expenditures Contributing to Administration	1726.11	273.32
Expenditures Contributing to Operations Support	2403.96	437.57

Profile 3, detailed in Table 31, has an average teacher attendance rate of about 94%, and an average teacher salary of about $77,825. It has an average of about 45 general education teachers per 1000 students and an average of about 12 special education teachers per 1000 students. Profile 3 has an average of about 16 years of teaching experience, an average of about 75% of its teachers have a master's degree, and an average of about 6% of its teachers are inexperienced. On average, this profile has about 13 aides per 1000 students. The average administrator salary is approximately $103,082. Profile 3 has an average of about 13% of its principals who are inexperienced, and an average of about 98% of its principals with a master's degree. Total, Profile 3 has an average of about 11 discipline days for the year. On average, about $8,719 of expenditures contribute to instruction, about $1,025 of expenditures on average contribute to pupil support, and about $433 of expenditures on average contribute to staff support. Additionally, on average, about $1,726 of expenditures contribute to administration, and an average of about $2,404 of expenditures contribute to operations support.

Table 32
District Profile B: Profile 4

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.93	0.02
Teacher Average Salary	66023.71	8817.99
General Education Teachers per 1000 Students	50.92	8.27
Special Education Teachers per 1000 Students	18.99	6.29
Average Years of Teaching Experience	12.83	2.99
Teachers with a Master's Degree	0.57	0.10
Inexperienced Teachers	0.13	0.09
Aides per 1000 Students	20.29	6.25
Administrator Average Salary	90421.59	11900.74
Inexperienced Principals	0.30	0.21
Principals with a Master's Degree	0.93	0.09
Total Days of Discipline	58.45	31.19
Expenditures Contributing to Instruction	10361.39	1677.33
Expenditures Contributing to Pupil Support	1567.39	472.56
Expenditures Contributing to Staff Support	902.43	447.18
Expenditures Contributing to Administration	3042.26	1083.52
Expenditures Contributing to Operations Support	3733.04	985.04

Table 32 specifies that Profile 4 has an average teacher attendance rate of about 93%, and an average teacher salary of about $66,024. It also has an average of about 51 general education teachers per 1000 students and an average of about 19 special education teachers per 1000 students. Profile 4 has an average of approximately 13 years of teaching experience. About 57% of its teachers on average have a master's degree, and about 13% of its teachers on average are inexperienced. Profile 4 has an average of about 20 aides per 1000 students. The average administrator's salary is approximately $90,422. An average of about 30% principals in Profile 4

are inexperienced, and an average of about 93% of its principals have a master's degree. There are an average of about 58 days of discipline throughout the year. About $10,361 of expenditures, on average, contributes to instruction, about $1,567 of expenditures on average contributes to pupil support, and about $902 of expenditures on average contributes to staff support. Additionally, an average of about $3,042 of expenditures contributes to administration, and an average of about $3,733 contributes to operations support.

Table 33

District Profile B: Profile 5

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	82113.42	7943.77
General Education Teachers per 1000 Students	53.66	9.44
Special Education Teachers per 1000 Students	12.85	3.48
Average Years of Teaching Experience	17.11	2.31
Teachers with a Master's Degree	0.75	0.11
Inexperienced Teachers	0.05	0.03
Aides per 1000 Students	19.14	11.54
Administrator Average Salary	102762.11	15722.41
Inexperienced Principals	0.12	0.15
Principals with a Master's Degree	0.98	0.07
Total Days of Discipline	10.09	10.44
Expenditures Contributing to Instruction	11164.11	1248.55
Expenditures Contributing to Pupil Support	1317.30	269.38
Expenditures Contributing to Staff Support	735.04	342.58
Expenditures Contributing to Administration	2597.41	500.17
Expenditures Contributing to Operations Support	2989.78	730.98

Profile 5, detailed in Table 33, has an average teacher attendance rate of approximately 94%, and an average teacher salary of about $82,113. This profile has an average of about 54 general education teachers per 1000 students and an average of about 13 special education teachers per 1000 students. There is an average of about 17 years of teaching experience. An average of about 75% of teachers in Profile 5 have a master's degree, and an average of about 5% of teachers in Profile 5 are considered to be inexperienced. Additionally, Profile 5 has an average of about 19 aides per 1000 students. The average administrator salary is approximately $102,762. Profile 5 has an average of about 12% of inexperienced principals and an average of about 98% of principals with a master's degree. In addition, the average number of discipline days is about 10. Approximately $11,164 of expenditures, on average, contributes to instruction, an average of about $1,317 contributes to pupil support, and an average of about $735 of expenditures contributes to staff support. Finally, an average of about $2,597 of expenditures contributes to administration, and an average of about $2,990 of expenditures contributes to operations support.

Table 34
District Profile B: Profile 6

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.02
Teacher Average Salary	57579.45	6740.78
General Education Teachers per 1000 Students	30.09	8.46
Special Education Teachers per 1000 Students	7.84	3.58
Average Years of Teaching Experience	14.32	2.38
Teachers with a Master's Degree	0.55	0.15
Inexperienced Teachers	0.10	0.07
Aides per 1000 Students	4.31	4.20
Administrator Average Salary	76685.96	15610.45
Inexperienced Principals	0.12	0.22
Principals with a Master's Degree	1.00	0.00
Total Days of Discipline	11.08	9.86
Expenditures Contributing to Instruction	10033.84	1381.06
Expenditures Contributing to Pupil Support	1036.58	386.26
Expenditures Contributing to Staff Support	386.68	281.16
Expenditures Contributing to Administration	3227.63	702.29
Expenditures Contributing to Operations Support	4232.47	1348.52

Table 34 outlines Profile 6 of District Profile B, and states that it has an average teacher attendance rate of about 94%, as well as an average teacher salary of about $57,579. It has on average approximately 30 general education teachers per 1000 students and an average of about 8 special education teachers per 1000 students. It also has an average of about 14 years of teaching experience. Approximately, on average, 55% of its teachers have a master's degree and on average about 10% of its teachers are considered to be inexperienced. Profile 6 has approximately 4 aides per 1000 students. The administrator average salary is approximately

$76,686. About 12%, on average, of Profile 6 principals are inexperienced, and 100% of principals have a master's degree. There is also an average of about 11 discipline days for the year. On average, about $10.034 of expenditures contributes to instruction, an average of about $1,037 of expenditures contributes to pupil support, and an average of about $387 of expenditures contributes to staff support. Finally, an average of about $3,228 of expenditures contributes to administration, and an average of about $4,232 contributes to operations support.

Table 35

District Profile B: Profile 7

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	57661.22	4715.40
General Education Teachers per 1000 Students	30.45	5.42
Special Education Teachers per 1000 Students	5.63	3.25
Average Years of Teaching Experience	17.26	3.05
Teachers with a Master's Degree	0.61	0.15
Inexperienced Teachers	0.08	0.05
Aides per 1000 Students	5.50	4.34
Administrator Average Salary	76277.75	14737.32
Inexperienced Principals	0.18	0.27
Principals with a Master's Degree	1.00	0.00
Total Days of Discipline	2.17	3.70
Expenditures Contributing to Instruction	8163.51	806.06
Expenditures Contributing to Pupil Support	675.79	231.82
Expenditures Contributing to Staff Support	497.28	338.27
Expenditures Contributing to Administration	2174.38	332.00
Expenditures Contributing to Operations Support	2838.18	543.83

Profile 7, outlined in Table 35, has an average teacher attendance rate of about 94%, and has an average teacher salary of about $57,661. It has an average of about 30 general education teachers per 1000 students and an average of about 6 special education teachers per 1000 students. There is an average of 17 years of teaching experience in Profile 7. An average of about 61% of teachers in Profile 7 have a master's degree, and an average of about 8% of teachers in Profile 7 are considered to be inexperienced. There is an average of approximately 6 aides per 1000 students. The average administrator salary is approximately $76,278, about 18% of principals on average are considered to be inexperienced, and 100% of principals have a master's degree. Profile 7 has an average of about 2 days of discipline. An average of approximately $8,164 of expenditures contributes to instruction, an average of about $676 of expenditures contributes to pupil support, and an average of about $497 of expenditures contributes to staff support. Additionally, an average of about $2,174 of expenditures contributes to administration and an average of about $2,838 of expenditures contributes to operations support.

Table 36
District Profile B: Profile 8

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	64411.40	4976.72
General Education Teachers per 1000 Students	45.13	4.63
Special Education Teachers per 1000 Students	10.78	3.34
Average Years of Teaching Experience	16.42	2.19
Teachers with a Master's Degree	0.69	0.08
Inexperienced Teachers	0.06	0.03
Aides per 1000 Students	8.32	5.86
Administrator Average Salary	82742.88	12874.35
Inexperienced Principals	0.13	0.17
Principals with a Master's Degree	0.99	0.04
Total Days of Discipline	8.11	8.15
Expenditures Contributing to Instruction	7382.13	759.96
Expenditures Contributing to Pupil Support	728.60	241.08
Expenditures Contributing to Staff Support	363.14	200.26
Expenditures Contributing to Administration	1584.27	271.69
Expenditures Contributing to Operations Support	2384.48	376.84

Profile 8, in Table 36, has an average teacher attendance rate of approximately 94%, and an average teacher salary of about $64,411. It has approximately 45 general education teachers per 1000 students and about 11 special education teachers per 1000 students. Profile 8 has an average of about 16 years of teaching experience. About 69% of its teachers have a master's degree, and about 6% of its teachers are considered to be inexperienced. Additionally, it has about 8vaides per 1000 students. The average administrator salary is approximately $82,743. There is an average of about 13% inexperienced principals and an average of about 99% of

principals have a master's degree. There is also an average of about 8 days of discipline. On average, about $7,382 of expenditures contributes to instruction, an average of about $729 of expenditures contributes to pupil support, and an average of about $363 of expenditures contributes to staff support. In addition, an average of about $1,584 of expenditures contributes to administration, and an average of about $2,384 of expenditures contributes to operations support.

Table 37
District Profile B: Profile 9

Variable	Mean	Standard Deviation
Teacher Attendance Rate	0.94	0.01
Teacher Average Salary	61139.18	6480.05
General Education Teachers per 1000 Students	45.25	8.30
Special Education Teachers per 1000 Students	11.48	3.42
Average Years of Teaching Experience	14.60	2.73
Teachers with a Master's Degree	0.57	0.12
Inexperienced Teachers	0.09	0.06
Aides per 1000 Students	8.39	5.74
Administrator Average Salary	81663.38	12529.01
Inexperienced Principals	0.29	0.25
Principals with a Master's Degree	0.60	0.14
Total Days of Discipline	11.07	10.91
Expenditures Contributing to Instruction	8008.79	1016.14
Expenditures Contributing to Pupil Support	756.58	224.53
Expenditures Contributing to Staff Support	417.90	241.32
Expenditures Contributing to Administration	1878.10	390.37
Expenditures Contributing to Operations Support	2805.23	724.78

Profile 9, described in Table 37, has an average teacher attendance rate of about 94%, and the average teacher salary is approximately $61,139. There are approximately 45 general education teachers per 1000 students and about 11 special education teachers per 1000 students. Teachers in Profile 9 have an average of about 15 years of experience. About 57% of those teachers, on average, have a master's degree and about 9% of those teachers, on average, are considered to be inexperienced. Additionally, there are approximately 8 aides, on average, per 1000 students. The average administrator salary for Profile 9 is approximately $81,663. About 29% of principals, on average, are considered to be inexperienced, and about 60% of principals, on average, have a master's degree. Profile 9 has an average of about 11 total days of discipline. On average, about $8,009 of expenditures contributes to instruction, $757 of expenditures on average contributes to pupil support, and $418 of expenditures on average contributes to staff support. Finally, an average of about $1,878 of expenditures contributes to administration and an average of about $2,805 of expenditures contributes to operations support.

To add more context to the impact of profiles on presented variables, an ANOVA was run on each variable to determine how much variance can be explained by the differences between profiles in District Profile A and District Profile B. These charts can be found in Appendix D. Results of note showed that 77% of the variance in principals with at least a master's degree can be explained by the differences between the eight profiles in District Profile A and 56% of the variance in days of student discipline. Also, 62% of the variance in teacher salary can be explained by the differences between the nine profiles in District Profile B, in addition to 75% of the variance in principals with at least a master's degree.

Research Question 3

After gathering all data relevant to this study, I answered my third research question: *How well do context variables and district variables predict school district performance indexes and value-added?* To answer this, a series of Bayesian Analysis of Variance (ANOVA) models were conducted across Context Profile A, Context Profile B, District Profile A, and District Profile B.

Bayesian ANOVA was chosen rather than traditional ANOVA for a few reasons. First, as an exploratory analysis, the purpose is to update our knowledge about these novel profiles, and provide a continuous measure of support for predictions, rather than test it against a hypothesis determined by a value of significance (van den Bergh, et al., 2020). As such, Bayesian inferencing provides that update, and models that predict well are rewarded (Wagenmakers, Morey, & Lee, 2016), while allowing for a comparison of all theoretical models, and balance fit with flexibility by penalizing more flexible models (Rouder, et al., 2016).

More specifically, each model is formulated based on Bayes Rule, which compares the probability of a model's hypothesis given the data, otherwise known the posterior probability, compared to the model's hypothesis before seeing the data, otherwise known is the prior probability. The resulting comparison formulates the Bayes Factor, which quantifies the support for a model test against a hypothesis (Etz & Vandekerckhove, 2017), such as the null model or prior. This creates a continuous factor, either an odds-ratio or log of the odds-ratio that balances fit and flexibility, and allows for model comparison as Bayes Factors are transitive (van den Bergh, et al., 2020). Finally, Bayesian ANOVA allows for an analysis of all individual effects of a predictor, by averaging the results of from each model that includes the predictor to provide a

probability that that predictor would be included or excluded in a model (van den Bergh, et al., 2020). Results of all Bayesian ANOVAs can be found in Appendix D.

In particular, the purpose of this analysis was to measure the effects of the context profiles and the district profiles; all four profiles were included as predictors in the analysis. This resulted in 16 theoretical model combinations, including the null model which each model was measured against. For the purpose of this analysis, 7 of the models were of interest: the four profiles combined, the two profiles models combined, the two district profiles combined, and each profile individually. In particular, the overall fit of each model, shown in Table 38, was summarized by $Log(BF_{10})$, or the Log of the Bayes Factor measured against the null hypothesis.

Table 38

Performance Index: Model Comparison

Models	P(M)	$Log(BF_M)$	$Log(BF_{10})$	error %
Null model	0.063	-429.42	0.00	
All Profiles	0.063	10.56	432.13	2.79
Both Context Profiles	0.063	-24.41	405.01	2.47
Context Profile B	0.063	-39.20	390.22	1.167×10^{-4}
Context Profile A	0.063	-182.70	246.72	0.01
Both District Profiles	0.063	-267.44	161.99	0.40
District Profile B	0.063	-299.55	129.88	1.974×10^{-5}
District Profile A	0.063	-330.87	98.55	0.01

Table 39

Performance Index: Analysis of Effects

Effects	P(incl)	P(excl)	P(incl|data)	P(excl|data)	Log(BF_{incl})
Context Profile A	0.500	0.500	1.000	1.395×10^{-4}	8.88
Context Profile B	0.500	0.500	1.000	2.631×10^{-14}	31.27
District Profile A	0.500	0.500	1.000	2.470×10^{-4}	8.31
District Profile B	0.500	0.500	1.000	2.399×10^{-6}	12.94

Table 40

Performance Index: Model Averaged R^2

		95% Credible Interval	
	Mean	Lower	Upper
All Profiles	0.79	0.74	0.82
Context Profiles	0.76	0.71	0.79
District Profiles	0.47	0.39	0.53

Looking at the Log(BF10) value in Table 38, the best predictor for the performance index is considering all four profiles together. However, breaking the profiles into two groups, as previously stated, indicates that the model containing both Context Profile A and Context Profile B is a better indicator of performance index than District Profile A and District Profile B. This is seen when comparing their Log(BF10) and Model Averaged R^2 values, as outlined in Table 39 and Table 40. The context model has a Log(BF10) value of 405.01, while the district model has a Log(BF10) value of 161.99; a higher Log(BF10) indicates an increased favor toward the context model as opposed to the district model. In addition, the R^2 value for the context model is 0.76, while the district model's R^2 value is 0.47. A higher R^2 value in the context model indicates it

explains a larger proportion of the variability in the performance index as opposed to the explained variability in the district model.

Much like the analyzing performance index, an initial model was run using all four profiles (Context Profile A, Context Profile B, District Profile A, and District Profile B). After the initial model, the profiles were broken up into two groups, one containing Context Profile A and Context Profile B and the other containing District Profile A and District Profile B, to determine if one group had more of an impact on value-added than the other. The results of this analysis, shown in Table 41, determined that the model containing Context Profile A and District Profile A has a relatively higher posterior probability than other combinations, in addition to having a high Log Bayes Factor. This information alone suggests that the model containing Context Profile A and District Profile A is the best predictor for value-added.

Table 41

Value Added: Model Comparison

Models	P(M)	Log(BF_M)	Log(BF_{10})	error %
Null model	0.063	-42.94	0.00	
All Profiles	0.063	-0.41	42.48	0.74
Both District Profiles	0.063	-2.68	40.25	1.32
District Profile A	0.063	-4.57	38.37	0.02
District Profile B	0.063	-9.79	33.15	9.519×10^{-5}
Both Context Profiles	0.063	-19.55	23.39	0.44
Context Profile A	0.063	-23.11	19.83	0.01
Context Profile B	0.063	-23.80	19.15	0.002

Table 42

Value Added: Analysis of Effects

Effects	P(incl)	P(excl)	P(incl|data)	P(excl|data)	Log(BF_{incl})
Context Profile A	0.500	0.500	0.94	0.06	2.74
Context Profile B	0.500	0.500	0.21	0.79	-1.31
District Profile A	0.500	0.500	0.999	5.984×10^{-4}	7.42
District Profile B	0.500	0.500	0.39	0.62	-0.47

Table 43

Value Added: Model Averaged R^2

		95% Credible Interval	
	Mean	Lower	Upper
All Profiles	0.20	0.10	0.31
Context Profiles	0.13	0.06	0.21
District Profiles	0.18	0.06	0.28

The value-added model was divided into Context Profile A and Context Profile B and District Profile A and District Profile B. The grouping results indicated that District Profile A and District Profile B are better indicators of value-added data than Context Profile A and Context Profile B. Although the context model resulted in a higher posterior probability value, Table 43 shows that the district model had a higher R^2 value than the context model. These results alone make it difficult to come up with a definitive conclusion as to which models best predict value-added data.

Summary

The first two research questions found four distinct profiles that best described the analyzed data: contextual profiles (Context Profile A and Context Profile B) and district profiles

(District Profile A and District Profile B). Context Profile A contained seven classes, Context Profile B contained ten classes, District Profile A contained eight, and District Profile B contained nine. The third research question showed how each profile contributed to the level of variance in reported performance indexes and value-added. It was found that, of all combinations aside from using all four profiles, Context Profile A and Context Profile B best explained the variance in the performance index measure. In contrast, aside from using all four profiles, District Profile A and District Profile B best explained the variance in the value-added measure. A more in-depth analysis of this study's findings will be discussed and considered in Chapter 5.

Chapter V. Conclusions And Recommendations

This study strived to determine combinations of variables that may impact performance indexes and value-added as reported by the Ohio Department of Education Report Cards distributed each year. This exploratory analysis contributes to the existing literature by drawing conclusions typically not seen in current literature. Most of the literature analyzed for this study focused on a limited number of variables. In contrast, this study focuses on combining a wide variety of variables that may not typically be grouped together in studies.

Review of the Study

This study reviewed the impact of various contextual and district variables on the performance index and value-added academic measures in the state of Ohio. The research questions asked which variables showed the most appropriate corresponding profiles to each academic measure and asked the level at which these variables predict performance indexes and value-added.

Discussion

This research suggests that rating school districts in Ohio based on a performance index may not be the most accurate view of a district's academic success, and should not be the only measure taken into consideration when comparing school districts. The value-added model guarantees that prior achievement fully captures the influences of all historical inputs, resulting in a holistic view of a school's past instead of omitting characteristics that may have played a prominent role in a district's past achievement (Gottfried, 2009). The performance index, on the other hand, though it is based on standardized testing scores, is widely reliant on the contextual variables analyzed. For example, students who are more disadvantaged tend to have lower academic success and lower scores on standardized tests for multiple reasons (Hasanagic, 2015;

Dahl & Lochner, 2012; Zha & Hall, 2019; Cueto et al., 2014; Diuk et al., 2019). If most of a district's enrollment is composed of disadvantaged students, there is a good chance that their performance index will be lower than others. The performance index does not sufficiently compare academic achievement in districts across Ohio. Instead, the performance index relies more on student demographics than academics because of negative correlations between higher-needs students and test scores. When comparing school districts, one should look at the academic growth over time per value-added. Though it is not explicitly stated as a comparison of school districts in Faber (2021), value-added gives a holistic view of a district's achievement beyond a "snapshot" view given by performance index values.

Research Question 1

The first research question asked, "Using latent profile analysis, how many profiles were identified using context variables?" After running all data through R, it was determined that there were two answers to this. The first profile was created through model 3 in R, meaning the model has equal variances and covariances. This profile was labeled Context Profile A and was comprised of seven classes. The second profile was created through model 1 in R, meaning that the model's equal variances and covariances are fixed to zero. This second profile was labeled Context Profile B and was comprised of 10 classes.

The two profiles that were found using context variables revealed that there may be hidden characteristics at the contextual level. Theoretically, there should be similar characteristics at the contextual level among the districts in each profile. These characteristics differ from other profiles and may not necessarily be readily observable. For example, table A5 in Appendix A describes the averages of non-white student enrollment across profiles in Context Profile A. This table shows that the average enrollment of non-white students in a school district

is the highest in profile 4 (about 0.81), while the lowest is profile 7 (about 0.08). This specific example could indicate that differences observed between profiles 4 and 7 may be due in part to the highly different means of non-white student enrollment. This could mean that the school districts in those profiles may need strategies and supports that differ from districts in other profiles. Profile 4 may benefit more from strategies and supports targeting non-white student enrollment than profile 7. To further build on the concept of hidden characteristics, looking at Table A10 in Appendix A, we can see that the highest mean of reported discipline occurrences corresponds with profile 4. Considering both Tables A5 and A10, it is reasonable to assume that, based on means, the higher the non-white student enrollment in a district, the more discipline occurrences will be reported. Considering this, districts in profile four might also need supports and strategies to target discipline occurrences, whereas profile seven does not indicate a problem with discipline occurrences.

Research Question 2

The second research question asked, "Using latent profile analysis, how many profiles were identified using district variables? Just like the first research question, there were two answers to this. The first profile was, again, created through model 3 in R. This profile was labeled District Profile A and comprised eight classes. District Profile B was created through model 1 in R and was made up of 9 classes.

The two profiles found using district variables revealed that there may be hidden characteristics at the district level that may not be readily observed. Theoretically, there should be similar characteristics at the district level among the districts in each profile. This could mean that the school districts in those profiles may need strategies and supports that differ from districts in other profiles. Take Table B2 in Appendix B into consideration. Profile 3 shows the

highest average teacher salary, while Profile 1 shows the lowest. Looking at this table alone, it would be reasonable to assume that any difference between both profiles across the model may be impacted by or contribute to the difference in average teacher salary. If you then consider Table B8, Profiles 1 and 3 have very similar numbers, indicating that there is most likely no correlation between the number of classroom aides per 1000 students and average teacher salary.

Research Questions 3

The third research question addressed was, "How well do context variables and district variables predict school district performance indexes and value-added?" Results showed that, although all four profiles together provide the best analysis for the performance index, the context profiles (Context Profile A and Context Profile B) are a better indicator of the performance index than the district profiles (District Profile A and District Profile B). In addition, a model containing District Profile A and District Profile B is the best predictor for value-added instead of other combinations of profiles. This means that the performance index is a rating of the students, while value added is a rating of the district. This shows that the performance index is primarily a function of a district's demographic and contextual characteristics. However, growth, measured by value-added, is more a function of the characteristics of the educators and resources. Demographic and contextual characteristics are considered during the "snapshot" academic analysis that the performance index provides. In contrast, the characteristics of educators and their resources are considered more when looking at a school district over time.

Conclusion

This study found that the performance index is a rating of the students, while value added is a rating of the district. While the performance index tends to provide a "snapshot" of current

performance based on indicators taken into account in context profiles, schools that have challenging demographics or challenging student backgrounds may be unfairly penalized if their total scores are lower despite making adequate progress. Value-added, in comparison, focuses on student growth and progress over time, being more indicative of the impact a school has on its students' learning. Value-added also tends to be fairer to schools with disadvantaged student populations or challenging backgrounds. Value-added, however, can be more complex to calculate and interpret. When comparing school districts in Ohio, it is essential to remember this information. When considering the performance index, you are widely looking at immediate student-level variables. However, when considering value-added, you mainly look at educator and administrator data over time. Because teachers and administrators may be in a district longer than most students, it seems counterintuitive to longitudinally measure data that may remain somewhat consistent over time (district-level data) instead of using that same measurement to analyze the impact of that district-level data on student achievement over an extended period of time.

Recognizing the hidden similarities among a profile can be extremely beneficial to educators and policymakers. The districts that make up a profile all have something in common, even if it is not immediately recognizable. Educators and policymakers may find it beneficial to look at districts in the same profile when evaluating the effectiveness of different strategies or supports offered to a school district.

Recommendations

Recommendations based on this study's results may widely rely on systematic change. Although this study was widely exploratory, it shed light on one glaring issue: school districts are widely rated based on data or characteristics they cannot necessarily control, and each school

district's individual characteristics do not appear to hold much weight when rating school districts in Ohio. For school districts to be rated fairly, they need to be rated more on their quality of education instead of the demographics of the students they serve. It may benefit school districts in Ohio to learn what contributes to their overall ratings and how much weight each variable holds in those ratings. As this research has shown, much of the data contributing to performance index data is contextual. Variables in the contextual profiles can be extremely difficult or even impossible to change at the district level; these profiles included variables such as the number of non-white or disabled students enrolled. On the other hand, most data contributing to value-added is a mix of contextual and district variables. Because traits at the district level are considered for value-added, it indicates greater individuality when rating school districts.

Future Research Opportunities

This study calls for further, in-depth analysis of processes used to analyze and rate school districts across Ohio. Discovering the impact of specific variables on district ratings may provide further insight into how school districts are rated across Ohio. Eventually, school district ratings should rely very little on contextual variables and more on academic performance data.

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Appendix A

This appendix contains the means and standard deviations of Context Profile A and Context Profile B classes and variables.

Context Profile A

Table A1

E_AS (Enrollment, All Students)

Profile	Mean	Standard Deviation
1	1966.19	1600.07
2	1524.00	987.50
3	1873.11	1511.89
4	7584.35	10987.78
5	1845.31	1457.84
6	6765.82	5556.77
7	1291.39	1083.94

Table A2

E_D (Enrollment, Disabled Students)

Profile	Mean	Standard Deviation
1	0.14	0.03
2	0.16	0.03
3	0.13	0.03
4	0.19	0.03
5	0.18	0.04
6	0.15	0.03
7	0.20	0.03

Table A3

E_ED (Enrollment, Economically Disadvantaged Students)

Profile	Mean	Standard Deviation
1	0.28	0.11
2	0.48	0.12
3	0.16	0.13
4	0.93	0.13
5	0.96	0.08
6	0.35	0.18
7	0.41	0.12

Table A4

E_ELL (Enrollment, English Language Learners)

Profile	Mean	Standard Deviation
1	0.01	0.02
2	0.01	0.02
3	0.01	0.01
4	0.07	0.07
5	0.01	0.02
6	0.06	0.04
7	0.01	0.01

Table A5

E_NW (Enrollment, Non-White Students)

Profile	Mean	Standard Deviation
1	0.11	0.07
2	0.11	0.07
3	0.12	0.08
4	0.81	0.13
5	0.16	0.14
6	0.47	0.10
7	0.08	0.04

Table A6

KRA_Avg (Overall Average KRA Scores)

Profile	Mean	Standard Deviation
1	266.88	4.04
2	264.68	4.59
3	275.59	4.88
4	259.40	3.95
5	262.21	4.08
6	266.68	5.87
7	263.95	4.06

Table A7

KRA_LitAvg (Overall Average KRA Language & Literacy Scores)

Profile	Mean	Standard Deviation
1	265.08	4.09
2	262.54	4.88
3	276.64	4.17
4	257.24	4.37
5	260.09	4.40
6	264.85	6.68
7	260.68	3.49

Table A8

S_Atten (Student Attendance Rate)

Profile	Mean	Standard Deviation
1	93.06	1.55
2	90.07	1.61
3	94.31	1.29
4	86.09	3.36
5	90.20	2.19
6	92.02	2.70
7	92.94	1.36

Table A9

S_Chronic (Student Chronic Absenteeism)

Profile	Mean	Standard Deviation
1	19.78	7.45
2	37.47	7.80
3	13.24	6.43
4	47.95	10.16
5	33.88	9.95
6	25.04	11.16
7	19.47	7.29

Table A10

Occur_D (Discipline Occurrences)

Profiles	Mean	Standard Deviation
1	28.85	21.78
2	44.06	33.65
3	13.11	16.16
4	159.71	75.16
5	67.54	48.74
6	70.78	75.26
7	50.36	31.70

Context Profile B

Table A11

E_AS (Enrollment, All Students)

Profile	Mean	Standard Deviation
1	1574.19	1170.40
2	3108.44	2214.21
3	1900.81	1501.81
4	19891.89	15904.70
5	1490.35	874.11
6	2510.04	3242.67
7	2126.86	1818.17
8	3970.93	3995.98
9	8498.25	5147.91
10	2048.43	1618.57

Table A12

E_D (Enrollment, Disabled Students)

Profile	Mean	Standard Deviation
1	0.15	0.03
2	0.17	0.02
3	0.15	0.03
4	0.19	0.02
5	0.19	0.03
6	0.11	0.03
7	0.13	0.03
8	0.19	0.03
9	0.13	0.03
10	0.17	0.03

Table A13

E_ED (Enrollment, Economically Disadvantaged Students)

Profile	Mean	Standard Deviation
1	0.33	0.10
2	0.56	0.12
3	0.36	0.10
4	0.88	0.18
5	0.95	0.08
6	0.09	0.06
7	0.21	0.08
8	0.98	0.04
9	0.29	0.15
10	0.50	0.10

Table A14

E_ELL (Enrollment, English Language Learners)

Profile	Mean	Standard Deviation
1	0.01	0.01
2	0.05	0.03
3	0.01	0.02
4	0.15	0.06
5	0.003	0.01
6	0.01	0.01
7	0.01	0.01
8	0.03	0.03
9	0.12	0.04
10	0.01	0.01

Table A15

E_NW (Enrollment, Non-White Students)

Profile	Mean	Standard Deviation
1	0.10	0.08
2	0.58	0.20
3	0.11	0.10
4	0.77	0.13
5	0.12	0.12
6	0.13	0.11
7	0.12	0.09
8	0.67	0.24
9	0.41	0.21
10	0.14	0.09

Table A16

KRA_Avg (Overall Average KRA Scores)

Profile	Mean	Standard Deviation
1	263.78	2.29
2	262.26	3.42
3	267.75	2.59
4	258.53	3.22
5	262.31	4.25
6	277.57	3.27
7	270.22	2.65
8	259.01	4.24
9	267.18	4.89
10	262.21	2.61

Table A17

KRA_LitAvg (Overall KRA Average Language & Literacy Scores)

Profile	Mean	Standard Deviation
1	261.66	2.38
2	259.74	4.59
3	266.21	2.82
4	255.71	3.99
5	260.18	4.55
6	277.66	3.52
7	268.92	2.68
8	257.14	4.29
9	265.23	5.45
10	259.84	2.50

Table A18

S_Atten (Student Attendance Rate)

Profile	Mean	Standard Deviation
1	93.08	0.86
2	89.97	1.51
3	91.28	0.78
4	85.19	3.24
5	90.66	1.08
6	94.89	1.01
7	94.03	1.13
8	86.01	2.93
9	93.11	2.21
10	89.72	1.57

Table A19

S_Chronic (Student Chronic Absence)

Profile	Mean	Standard Deviation
1	19.83	4.78
2	34.63	6.62
3	29.58	4.20
4	50.06	8.99
5	32.36	9.35
6	10.05	4.28
7	14.96	5.40
8	49.20	8.85
9	19.73	8.20
10	37.47	7.23

Table A20

Occur_D (Number of Discipline Occurrences)

Profile	Mean	Standard Deviation
1	34.51	23.33
2	99.65	50.93
3	42.56	24.46
4	148.70	61.21
5	55.87	41.11
6	7.26	7.68
7	18.64	13.61
8	165.23	72.27
9	65.09	105.62
10	51.22	27.34

Appendix B

This appendix contains the means and standard deviations for all classes and variables under District Profile A and District Profile B.

District Profile A

Table B1

T_AR (Teacher Attendance Rate)

Profile	Mean	Standard Deviation
1	0.95	0.01
2	0.94	0.01
3	0.94	0.01
4	0.93	0.02
5	0.94	0.02
6	0.94	0.02
7	0.94	0.01
8	0.94	0.01

Table B2

T_AS (Teacher Average Salary)

Profile	Mean	Standard Deviation
1	53623.56	9469.02
2	63331.16	6395.17
3	81228.26	4514.18
4	65837.43	8292.45
5	79020.31	13231.37
6	60722.45	10243.51
7	58283.44	6210.03
8	60979.91	7235.28

Table B3

T_GE (General Education Teachers per 1000 Students)

Profile	Mean	Standard Deviation
1	54.69	7.76
2	47.00	5.80
3	46.95	4.62
4	48.49	6.68
5	61.33	10.07
6	32.45	10.72
7	32.18	6.87
8	45.35	8.18

Table B4

T_SpEd (Special Education Teachers per 1000 Students)

Profile	Mean	Standard Deviation
1	14.69	8.89
2	12.66	3.91
3	11.78	2.57
4	17.00	4.09
5	12.39	4.30
6	11.85	7.63
7	7.06	4.04
8	11.79	3.78

Table B5

T_YE (Average Years of Teaching Experience)

Profile	Mean	Standard Deviation
1	10.60	2.23
2	15.38	2.48
3	15.93	2.79
4	13.36	2.54
5	16.42	3.09
6	13.60	3.17
7	16.18	3.33
8	14.60	2.70

Table B6

T_MA (Teachers with at Least a Master's Degree)

Profile	Mean	Standard Deviation
1	0.52	0.09
2	0.64	0.11
3	0.76	0.08
4	0.59	0.09
5	0.75	0.14
6	0.63	0.17
7	0.60	0.14
8	0.56	0.12

Table B7

T_IE (Inexperienced Teachers)

Profile	Mean	Standard Deviation
1	0.28	0.04
2	0.08	0.05
3	0.06	0.04
4	0.11	0.07
5	0.04	0.03
6	0.07	0.07
7	0.09	0.06
8	0.10	0.06

Table B8

Aides (Aides per 1000 Students)

Profile	Mean	Standard Deviation
1	12.75	10.04
2	10.36	6.48
3	12.35	7.76
4	16.00	7.02
5	27.02	10.04
6	7.30	6.84
7	6.47	6.65
8	8.64	6.37

Table B9

Ad_AS (Administrator Average Salary)

Profile	Mean	Standard Deviation
1	81652.52	10011.37
2	83460.65	13349.70
3	105089.49	12089.87
4	92885.54	12757.48
5	95629.40	16946.76
6	77549.03	10280.17
7	76323.73	15256.81
8	81245.60	12685.58

Table B10

P_IE (Inexperienced Principals)

Profile	Mean	Standard Deviation
1	0.27	0.27
2	0.15	0.18
3	0.12	0.16
4	0.29	0.23
5	0.25	0.25
6	0.05	0.10
7	0.20	0.29
8	0.30	0.27

Table B11

P_MA (Principals with at Least a Master's Degree)

Profile	Mean	Standard Deviation
1	0.95	0.07
2	0.98	0.05
3	0.98	0.05
4	0.95	0.08
5	1.00	0.00
6	0.97	0.06
7	1.00	0.02
8	0.61	0.13

Table B12

Days_D (Days of Discipline)

Profile	Mean	Standard Deviation
1	17.51	12.72
2	10.63	9.58
3	7.61	7.07
4	68.45	22.00
5	7.27	6.97
6	12.58	9.82
7	5.53	7.76
8	11.16	10.83

Table B13

Instruction (Expenditures Contributing to Instruction)

Profile	Mean	Standard Deviation
1	7893.27	1223.24
2	7795.75	1009.37
3	9298.44	1124.00
4	9385.18	1721.37
5	11526.92	1694.43
6	9951.30	1558.85
7	8904.82	1408.69
8	8041.22	1136.44

Table B14

PupilSupport (Expenditures Contributing to Pupil Support)

Profile	Mean	Standard Deviation
1	904.33	331.40
2	806.01	268.21
3	1058.61	239.97
4	1409.36	529.17
5	1275.75	412.92
6	1142.60	568.11
7	782.89	312.81
8	772.38	266.54

Table B15

StaffSupport (Expenditures Contributing to Staff Support)

Profile	Mean	Standard Deviation
1	494.80	194.02
2	398.54	218.94
3	491.47	240.50
4	878.00	380.84
5	1084.08	744.04
6	534.30	341.36
7	472.69	315.08
8	423.56	238.47

Table B16

Administration (Expenditures Contributing to Administration)

Profile	Mean	Standard Deviation
1	1820.67	475.34
2	1722.92	372.98
3	1928.46	439.45
4	2446.86	658.09
5	2788.83	518.98
6	4301.50	1104.72
7	2314.52	481.25
8	1877.95	389.82

Table B17

OperationsSupport (Expenditures Contributing to Operations Support)

Profile	Mean	Standard Deviation
1	2584.53	683.27
2	2596.68	609.30
3	2586.44	590.91
4	3332.05	579.69
5	3096.33	973.93
6	4214.70	1637.80
7	2979.89	808.61
8	2779.11	713.83

District Profile B

Table B18

T_AR (Teacher Attendance Rate)

Profile	Mean	Standard Deviation
1	0.93	0.01
2	0.94	0.01
3	0.94	0.01
4	0.93	0.02
5	0.94	0.01
6	0.94	0.02
7	0.94	0.01
8	0.94	0.01
9	0.94	0.01

Table B19

T_AS (Teacher Average Salary)

Profile	Mean	Standard Deviation
1	60455.37	4736.60
2	55747.66	7547.67
3	77824.52	4836.26
4	66023.72	8817.99
5	82113.42	7943.77
6	57579.45	6740.78
7	57661.22	4715.40
8	64411.40	4976.72
9	61139.18	6480.05

Table B20

T_GE (General Education Teachers per 1000 Students)

Profile	Mean	Standard Deviation
1	50.57	6.44
2	47.13	8.04
3	44.98	4.27
4	50.92	8.27
5	53.66	9.44
6	30.09	8.46
7	30.45	5.42
8	45.13	4.63
9	45.25	8.30

Table B21

T_SpEd (Special Education Teachers per 1000 Students)

Profile	Mean	Standard Deviation
1	15.19	3.57
2	13.04	4.60
3	12.39	2.67
4	18.99	6.29
5	12.85	3.48
6	7.84	3.58
7	5.63	3.25
8	10.78	3.34
9	11.48	3.42

Table B22

T_YE (Average Years of Teaching Experience)

Profile	Mean	Standard Deviation
1	14.62	1.75
2	11.60	2.01
3	15.83	2.62
4	12.83	2.99
5	17.11	2.31
6	14.32	2.38
7	17.26	3.05
8	16.42	2.19
9	14.60	2.73

Table B23

T_MA (Teachers with at Least a Master's Degree)

Profile	Mean	Standard Deviation
1	0.59	0.10
2	0.53	0.10
3	0.75	0.07
4	0.57	0.10
5	0.75	0.11
6	0.55	0.15
7	0.61	0.15
8	0.69	0.08
9	0.57	0.12

Table B24

T_IE (Inexperienced Teachers)

Profile	Mean	Standard Deviation
1	0.08	0.04
2	0.18	0.07
3	0.06	0.04
4	0.13	0.09
5	0.05	0.03
6	0.10	0.07
7	0.08	0.05
8	0.06	0.03
9	0.09	0.06

Table B25

Aides (Aides per 1000 Students)

Profile	Mean	Standard Deviation
1	12.62	7.11
2	9.81	6.70
3	13.09	6.52
4	20.29	6.25
5	19.14	11.54
6	4.31	4.20
7	5.50	4.34
8	8.32	5.86
9	8.39	5.74

Table B26

Ad_AS (Administrator Average Salary)

Profile	Mean	Standard Deviation
1	79777.81	12690.74
2	80557.04	11436.87
3	103081.88	9691.97
4	90421.59	11900.74
5	102762.12	15722.41
6	76685.96	15610.45
7	76277.75	14737.32
8	82742.88	12874.35
9	81663.38	12529.01

Table B27

P_IE (Inexperienced Principals)

Profile	Mean	Standard Deviation
1	0.14	0.18
2	0.31	0.29
3	0.13	0.17
4	0.30	0.21
5	0.12	0.15
6	0.12	0.22
7	0.18	0.27
8	0.13	0.17
9	0.29	0.25

Table B28

P_MA (Principals with at Least a Master's Degree)

Profile	Mean	Standard Deviation
1	0.98	0.05
2	0.97	0.07
3	0.98	0.04
4	0.93	0.09
5	0.98	0.07
6	1.00	0.00
7	1.00	0.00
8	0.99	0.04
9	0.60	0.14

Table B29

Days_D (Discipline Days)

Profile	Mean	Standard Deviation
1	15.15	13.07
2	11.51	10.22
3	10.70	9.79
4	58.45	31.19
5	10.09	10.44
6	11.08	9.86
7	2.17	3.70
8	8.11	8.15
9	11.07	10.91

Table B30

Instruction (Expenditures Contributing to Instruction)

Profile	Mean	Standard Deviation
1	8614.40	950.72
2	7337.60	798.98
3	8719.44	782.52
4	10361.39	1677.33
5	11164.11	1248.55
6	10033.84	1381.06
7	8163.51	806.06
8	7382.13	759.96
9	8008.79	1016.14

Table B31

PupilSupport (Expenditures Contributing to Pupil Support)

Profile	Mean	Standard Deviation
1	894.93	260.87
2	723.20	219.68
3	1025.12	214.00
4	1567.39	472.56
5	1317.30	269.38
6	1036.58	386.26
7	675.79	231.82
8	728.60	241.08
9	756.58	224.53

Table B32

StaffSupport (Expenditures Contributing to Staff Support)

Profile	Mean	Standard Deviation
1	496.57	342.27
2	410.80	206.29
3	433.01	177.09
4	902.43	447.18
5	735.04	342.58
6	386.68	281.16
7	497.28	338.27
8	363.14	200.26
9	417.90	241.32

Table B33

Administration (Expenditures Contributing to Administration)

Profile	Mean	Standard Deviation
1	1972.30	427.45
2	1794.33	440.87
3	1726.11	273.32
4	3042.26	1083.52
5	2597.41	500.17
6	3227.63	702.29
7	2174.38	332.00
8	1584.27	271.69
9	1878.10	390.37

Table B34

Operations Support (Expenditures Contributing to Operations Support)

Profile	Mean	Standard Deviation
1	2955.70	629.13
2	2572.63	669.81
3	2403.96	437.57
4	3733.04	985.04
5	2989.78	730.98
6	4232.47	1348.52
7	2838.18	543.83
8	2384.48	376.84
9	2805.23	724.78

Appendix C

This appendix contains ANOVA analyses of all variables that make up Context Profile A and Context Profile B.

Table C1

Enrollment, All Students

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	1.82e+9	6	3.03e+8	28.9	<0.001	0.225	0.225	0.216
Residuals	6.29e+9	598	1.05e+7					

Note. Type III Sum of Squares

Table C2

Enrollment, Disabled Students

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	0.246	6	0.0410	48.3	<0.001	0.326	0.326	0.319
Residuals	0.508	598	8.49e-4					

Note. Type III Sum of Squares

Table C3

Enrollment, English Language Learners

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	0.185	6	0.0309	45.7	<0.001	0.315	0.315	0.307
Residuals	0.404	598	6.75e-4					

Note. Type III Sum of Squares

Table C4

Enrollment, Non-White Students

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	19.13	6	3.18759	429	<0.001	0.811	0.811	0.809
Residuals	4.45	598	0.00744					

Note. Type III Sum of Squares

Table C5

KRA, Overall Average Scores

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	7780	6	1296.7	69.5	<0.001	0.411	0.411	0.405
Residuals	11155	598	18.7					

Note. Type III Sum of Squares

Table C6

KRA, Overall Average Language & Literacy Scores

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	11779	6	1963.1	101	<0.001	0.503	0.503	0.497
Residuals	11660	598	19.5					

Note. Type III Sum of Squares

Table C7

Student Attendance

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	2312	6	385.32	114	<0.001	0.534	0.534	0.529
Residuals	2015	598	3.37					

Note. Type III Sum of Squares

Table C8

Student Chronic Absence

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	50594	6	8432.3	128	<0.001	0.561	0.561	0.557
Residuals	39519	598	66.1					

Note. Type III Sum of Squares

Table C9

Discipline Occurrences

	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile A	642191	6	107032	78.8	<0.001	0.441	0.441	0.435
Residuals	812485	598	1359					

Note. Type III Sum of Squares

Context Profile B

Table C10

Enrollment

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	$3.611\times10^{+9}$	9	$4.013\times10^{+8}$	53.118	< .001	0.446	0.446	0.437
Residuals	$4.495\times10^{+9}$	595	$7.554\times10^{+6}$					

Note. Type III Sum of Squares

Table C11

Disability

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	0.285	9	0.032	40.179	< .001	0.378	0.378	0.368
Residuals	0.469	595	7.878×10^{-4}					

Note. Type III Sum of Squares

Table C12

Economically Disadvantaged

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	40.396	9	4.488	523.569	< .001	0.888	0.888	0.886
Residuals	5.101	595	0.009					

Note. Type III Sum of Squares

Table C13

English Language Learners

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	0.397	9	0.044	136.684	< .001	0.674	0.674	0.669
Residuals	0.192	595	3.226×10^{-4}					

Note. Type III Sum of Squares

Table C14

Non-White

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	16.004	9	1.778	139.814	< .001	0.679	0.679	0.674
Residuals	7.568	595	0.013					

Note. Type III Sum of Squares

Table C15

KRA Average

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	13629.730	9	1514.414	169.839	< .001	0.720	0.720	0.715
Residuals	5305.463	595	8.917					

Note. Type III Sum of Squares

Table C16

KRA Lit Average

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	17482.915	9	1942.546	194.054	< .001	0.746	0.746	0.742
Residuals	5956.158	595	10.010					

Note. Type III Sum of Squares

Table C17

Attendance

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	3180.625	9	353.403	183.510	< .001	0.735	0.735	0.731
Residuals	1145.847	595	1.926					

Note. Type III Sum of Squares

Table C18

Chronic Absences

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	68018.945	9	7557.661	203.526	< .001	0.755	0.755	0.751
Residuals	22094.557	595	37.134					

Note. Type III Sum of Squares

Table C19

Discipline Occurrences

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
Context Profile B	773348.646	9	85927.627	75.040	< .001	0.532	0.532	0.524
Residuals	681326.559	595	1145.087					

Note. Type III Sum of Squares

Appendix D

ANOVAS District Profile A

Table D1

Teacher Attendance

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	0.004	7	5.434×10^{-4}	3.358	0.002	0.038	0.038	0.027
Residuals	0.096	595	1.618×10^{-4}					

Note. Type III Sum of Squares

Table D2

Teacher Salary

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	$2.412\times10^{+10}$	7	$3.446\times10^{+9}$	76.018	< .001	0.472	0.472	0.465
Residuals	$2.697\times10^{+10}$	595	$4.534\times10^{+7}$					

Note. Type III Sum of Squares

Table D3

Gen Ed Teachers per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	18649.418	7	2664.203	65.824	< .001	0.436	0.436	0.429
Residuals	24082.525	595	40.475					

Note. Type III Sum of Squares

Table D4

SPED Teachers per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	2411.609	7	344.516	20.565	< .001	0.195	0.195	0.185
Residuals	9967.600	595	16.752					

Note. Type III Sum of Squares

Table D5

Teachers Master's Degree

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	1.617	7	0.231	18.910	< .001	0.182	0.182	0.172
Residuals	7.268	595	0.012					

Note. Type III Sum of Squares

Table D6

Teacher Experience

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	558.877	7	79.840	11.356	< .001	0.118	0.118	0.107
Residuals	4183.305	595	7.031					

Note. Type III Sum of Squares

Table D7

Inexperienced Teachers

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	0.707	7	0.101	41.314	< .001	0.327	0.327	0.319
Residuals	1.455	595	0.002					

Note. Type III Sum of Squares

Table D8

Aides per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	5561.747	7	794.535	17.042	< .001	0.167	0.167	0.157
Residuals	27739.774	595	46.621					

Note. Type III Sum of Squares

Table D9

Administrator Salaries

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	$3.299\times10^{+10}$	7	$4.713\times10^{+9}$	26.471	< .001	0.237	0.237	0.228
Residuals	$1.059\times10^{+11}$	595	$1.780\times10^{+8}$					

Note. Type III Sum of Squares

Table D10

Inexperienced Administrators

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	1.990	7	0.284	6.636	< .001	0.072	0.072	0.061
Residuals	25.494	595	0.043					

Note. Type III Sum of Squares

Table D11

Principals Master's Degree

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	7.074	7	1.011	282.537	< .001	0.769	0.769	0.766
Residuals	2.128	595	0.004					

Note. Type III Sum of Squares

Table D12

Days/Students Discipline

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	75383.908	7	10769.130	106.025	< .001	0.555	0.555	0.549
Residuals	60435.353	595	101.572					

Note. Type III Sum of Squares

Table D13

Expenditures Instruction

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	0.148	7	0.021	14.436	< .001	0.145	0.145	0.135
Residuals	0.874	595	0.001					

Note. Type III Sum of Squares

Table D14

Expenditures Pupil Support

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	$1.366\times10^{+7}$	7	$1.951\times10^{+6}$	22.394	< .001	0.209	0.209	0.199
Residuals	$5.185\times10^{+7}$	595	87144.200					

Note. Type III Sum of Squares

Table D15

Expenditures Staff Support

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	0.017	7	0.002	8.361	< .001	0.090	0.090	0.079
Residuals	0.171	595	2.874×10^{-4}					

Note. Type III Sum of Squares

Table D16

Expenditures Administration

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	$9.647\times10^{+7}$	7	$1.378\times10^{+7}$	73.901	< .001	0.465	0.465	0.458
Residuals	$1.110\times10^{+8}$	595	186490.613					

Note. Type III Sum of Squares

Table D17

Expenditures Operations

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile A	0.056	7	0.008	7.507	< .001	0.081	0.081	0.070
Residuals	0.636	595	0.001					

Note. Type III Sum of Squares

ANOVAS District Profile B

Table D18

Teacher Attendance

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	0.009	8	0.001	7.712	< .001	0.094	0.094	0.082
Residuals	0.091	594	1.526×10^{-4}					

Note. Type III Sum of Squares

Table D19

Teacher Salary

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	$3.154\times10^{+10}$	8	$3.942\times10^{+9}$	119.713	< .001	0.617	0.617	0.612
Residuals	$1.956\times10^{+10}$	594	$3.293\times10^{+7}$					

Note. Type III Sum of Squares

Table D20

Gen Ed Teachers per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	18980.019	8	2372.502	59.333	< .001	0.444	0.444	0.436
Residuals	23751.923	594	39.986					

Note. Type III Sum of Squares

Table D21

SPED Teachers per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	4598.450	8	574.806	43.882	< .001	0.371	0.371	0.363
Residuals	7780.759	594	13.099					

Note. Type III Sum of Squares

Table D22

Teachers Master's Degree

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	3.147	8	0.393	40.711	< .001	0.354	0.354	0.345
Residuals	5.739	594	0.010					

Note. Type III Sum of Squares

Table D23

Teacher Experience

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	1558.834	8	194.854	36.359	< .001	0.329	0.329	0.319
Residuals	3183.348	594	5.359					

Note. Type III Sum of Squares

Table D24

Inexperienced Teachers

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	0.874	8	0.109	50.357	< .001	0.404	0.404	0.396
Residuals	1.289	594	0.002					

Note. Type III Sum of Squares

Table D25

Aides per 1000

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	8126.414	8	1015.802	23.968	< .001	0.244	0.244	0.234
Residuals	25175.106	594	42.382					

Note. Type III Sum of Squares

Table D26

Administrator Salaries

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	$4.388\times10^{+10}$	8	$5.485\times10^{+9}$	34.280	< .001	0.316	0.316	0.306
Residuals	$9.504\times10^{+10}$	594	$1.600\times10^{+8}$					

Note. Type III Sum of Squares

Table D27

Inexperienced Administrators

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	3.004	8	0.375	9.111	< .001	0.109	0.109	0.097
Residuals	24.480	594	0.041					

Note. Type III Sum of Squares

Table D28

Principals Master's Degree

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	6.926	8	0.866	225.930	< .001	0.753	0.753	0.749
Residuals	2.276	594	0.004					

Note. Type III Sum of Squares

Table D29

Days/Students Discipline

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	57749.981	8	7218.748	54.925	< .001	0.425	0.425	0.417
Residuals	78069.280	594	131.430					

Note. Type III Sum of Squares

Table D30

Expenditures Instruction

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	0.206	8	0.026	18.771	< .001	0.202	0.202	0.191
Residuals	0.816	594	0.001					

Note. Type III Sum of Squares

Table D31

Expenditures Pupil Support

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	$2.626\times10^{+7}$	8	$3.282\times10^{+6}$	49.673	< .001	0.401	0.401	0.392
Residuals	$3.925\times10^{+7}$	594	66080.441					

Note. Type III Sum of Squares

Table D32

Expenditures Staff Support

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	0.011	8	0.001	4.616	< .001	0.059	0.059	0.046
Residuals	0.177	594	2.977×10^{-4}					

Note. Type III Sum of Squares

Table D33

Expenditures Administration

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	$1.023\times10^{+8}$	8	$1.278\times10^{+7}$	72.202	< .001	0.493	0.493	0.486
Residuals	$1.052\times10^{+8}$	594	177050.842					

Note. Type III Sum of Squares

Table D34

Expenditures Operations

Cases	Sum of Squares	df	Mean Square	F	p	η^2	η^2_p	ω^2
District Profile B	0.103	8	0.013	13.000	< .001	0.149	0.149	0.137
Residuals	0.589	594	9.912×10^{-4}					

Note. Type III Sum of Squares

Appendix E

BIC Differences with Best Fitting LPA Models

Table E1

Context Profile A (Model 3, 10 Profiles)

Profiles	BIC Difference
1	4109.62
2	2397.30
3	1435.80
4	963.95
5	751.22
6	605.30
7	422.23
8	420.09
9	155.51
10	0.00
11	20.63

Table E2

Context Profile (Model 1, 7 Profiles)

Profiles	BIC Difference
1	729.27
2	315.81
3	318.72
4	338.38
5	84.39
6	129.82
7	0.00
8	36.92

Table E3

District Profile A (Model 3, 8 Profiles)

Profiles	BIC Difference
1	838.72
2	406
3	332.68
4	157.75
5	60.72
6	74.81
7	69.11
8	0
9	27.41

Table E4

District Profile B (Model 1, 9 Profiles)

Profiles	BIC Difference
1	2175.54
2	1679.25
3	1109.77
4	748.56
5	375.13
6	375.52
7	95.28
8	92.68
9	0
10	4.79