

Studying the Effects of Social Context and  
Demographics on Behavior and Performance in a  
Colorado Springs Charter Middle School

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## **Abstract**

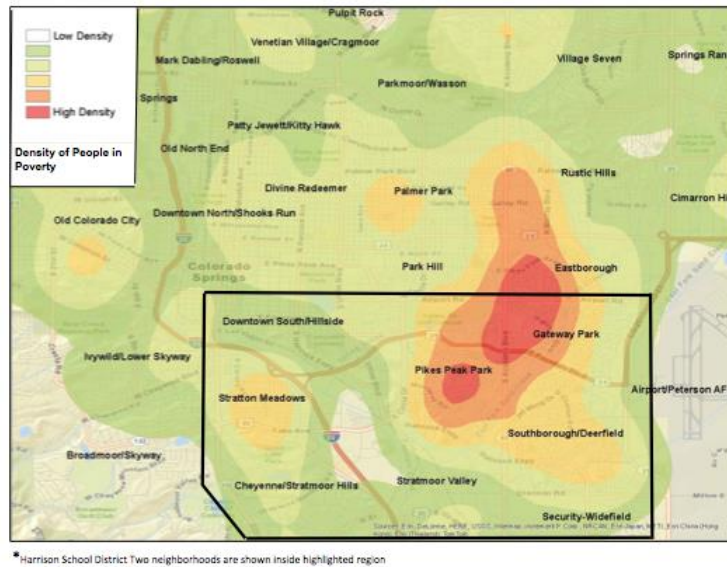
Over the past several decades, research has reported strong relationships between social context, demographics and children's consequential school behavior and performance outcomes. This study explores these relationships within the context of a local charter school in Colorado Springs, serving a population of primarily low-income and minority students. It is hoped that increasing the knowledge behind the specific influences of poor behavior and academic performance can provide an opportunity for the school to find to constructively and most effectively combat these forces. I collected data from School Insight on 457 middle school students for the 2014-2015 first semester, allowing various demographic, social, economic, behavioral and performance measures to be analyzed. Results showed that forces external to the school environment are at play in influencing behavior and performance in school. Most strikingly, results of a multivariate analysis displayed disparities in the representation of racial minorities in the honors college. Thus, the results of this study confirm that external forces influence school behavior and performance, while also drawing attention to another potential matter requiring attention within the school.

## **Introduction**

Poverty impacts distinct populations generation after generation, functioning in a cyclical manner, and leaving little opportunity for upward mobility. Geographies of either opportunity or bleak inopportunity form as a consequence of the immensely uneven distribution of wealth across the U.S. and the high rates of poverty concentrated in certain regions. When highly concentrated in urban areas, unfavorable features of a population can dictate the overall environment of the region and impact the quality of life being fostered there. Research shows that neighborhood effects explain, in part, the relationship between the social attributes defining a neighborhood and the concomitant health, safety, behavioral, and achievement outcomes of that neighborhood. Therefore, the attributes of these geographies often determine the life trajectories of those residing in the region.

Schools provide a significant opportunity to disrupt the cycles of poverty debilitating populations in certain geographic locations; the Robert Wood Johnson Foundation presented a report in 2008 illustrating that educational attainment has a strong positive relationship with upward mobility, socioeconomic status, and quality of life. However, across the United States, public schools in low-income regions are often faced with the challenge of serving high volumes of students below the poverty line, with poor funding, few resources, and lower quality teaching. Consequently, the quality of educational opportunity in impoverished regions continues to decline, perpetuating, rather than disrupting, the intergenerational transmission of low educational achievement in these regions. Thus, education plays a central role in predicting the trajectory of a population; the inequality of educational opportunity, resulting from concentrated poverty and accompanying neighborhood effects surrounding schools, has a profound, detrimental impact on the youth growing up in these hostile environments.

### *Harrison School District Two and a Local Charter School*



The population of Harrison School District Two of El Paso County in Colorado Springs, CO confronts this challenging environment of deleterious neighborhood effects, inequality of educational opportunity, and little upward mobility. The region is distinguishable by its plethora of aggressive and predatory payday lenders, liquor stores, gun shops, fast food restaurants, bail bond locations, and other markets targeting low-income neighborhoods and promoting high risk behavior. Across El Paso County, District Two has the highest concentration of poverty, minority populations, the uninsured, low-income housing, students eligible for free or reduced lunch, and adults with education attainment levels no higher than high school. All of these disadvantageous, intertwining attributes of the region shape a challenging life journey for those residing there.

The twenty-five public schools in District Two stand as stark products of their surroundings; reflecting the high-risk behaviors of the general population, the intergenerational context of low educational attainment, and the hostile geography of inopportunity. The social disparities evident between District Two and more affluent districts of El Paso County are strongly reflected in the behavior and performance outcomes in these schools. For example, the 2013 District Two reports on average TCAP scores for 5<sup>th</sup> grade show that students fell in the 61<sup>st</sup> percentile for Math scores, the 68<sup>th</sup> percentile for Reading scores, the 44<sup>th</sup> percentile for Science scores, and the 56<sup>th</sup> percentile for Writing scores. In contrast, Cheyenne Mountain School District Twelve, home to a more affluent and predominately White Non-Hispanic population, reported in the 84<sup>th</sup> percentile for Math scores, the 88<sup>th</sup> percentile for Reading scores, the 71<sup>st</sup> percentile for Science scores, and the 76<sup>th</sup> percentile for Writing scores. The disparities in the quality of educational experiences and opportunities offered in District Two versus the District Twelve schools have a profound effect on the reproduction of educational inequality.

In 2009, Springs Charter<sup>1</sup> was founded with the purpose of undermining the social forces perpetuating inequality and intergenerational low levels of educational attainment in District Two. The 501(c)(3) non-profit charter school hoped it could foster an environment for the students, promoting social mobility in a region lacking in high levels of educational achievement, so that they could begin to foresee a future ahead with opportunity, direction, and hope. The school was built on three pillars: education, character, and community. These pillars were instituted based on the verity that District Two students face much more than just barriers in academics as a result of the environments surrounding them. It was presumed that having character development and community values as second and third, equally important, pillars of the school to education, could potentially assist in overcoming the overwhelming neighborhood effects pervasive in District Two.

### ***The Research Focus***

The purpose of this study is to unravel the intertwining social factors contributing to poor behavior and low academic performance at Springs Charter through the quantitative analysis of Springs Charter's student-level data. Discrepancies between the differing social contexts and demographics of the students, and their concomitant school behavior and performance, could shed light on which cohorts within the middle school population need the most attention in order to build the most constructive developmental and learning environment for students. In this report, I address the following questions: How might students' individual social contexts and demographics potentially influence behavior and academic performance within the middle school? Following the literature, which cohorts within the school embody the most pronounced reflections of their surrounding district and demonstrate consistent relationships with performance and behavior outcomes? What are the strongest factors at play within Springs Charter influencing behavior and performance?

This report will aim to provide the school with more context regarding individual-level attributes of the student body, thus informing future decisions regarding performance and behavior programs within the school so that they better serve the students. As stated by a Springs Charter Administrator, "being able to assess our progress so far, and then make necessary adjustments, is critical to being successful." Therefore, strengthening current structures of support and creating new ones for students within Springs Charter will make the school stronger and more effective in shaping the paths of its students in the long term. It is hoped that these innovative efforts to disrupt low educational attainment levels and promote upward mobility in the region can assist students in building a life with fewer barriers and greater opportunity ahead.

### **Literature Review**

Life in poverty can have tragic life-determining effects on youth. Children's exposure to different levels of social, economic, and cultural capital have been shown to significantly influence development, behavior and achievement (Beal, Ausiello, and

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<sup>1</sup> "Springs Charter" is a pseudonym for the name of the charter school that is the focus of this report.

Perrin 2001; Brooks-Gunn and Duncan 2015; Dwyer 2010). Due to extremely uneven distributions of wealth, gentrification, and segregated residential patterns, high concentrations of low-income population regularly emerge within U.S. cities: “The linkages among place, race and privilege are shaped by three dominant forces—sprawl, concentrated poverty, and segregation—all of which play out in large part in response to public policy decisions and practices of powerful private institutional actors” (Squires and Kubrin 2005: 48). This pattern fosters regions characterized by high-risk behaviors, with increased crime, high concentrations of minority populations, poor living conditions, low educational attainment levels, and diminishing health (Charles 2003; Factor, Kawachi, and William 2011; Ross and Mirowsky 2008). Therefore, children engulfed in these geographies of inopportunity, confronting the adversities and influences presented by their surroundings every day, often develop into products of these surrounds over time (Bowles and Nelson 2015; Erikson and Goldthorpe 2002; Musick and Mare 2006).

### *The Role of Schools in Geographies of Inequality*

Previous studies have documented the relationship between geographies of inequality surrounding schools in impoverished regions and the consequential effects on developing children (Logan et. al. 2012; Holiday and Dwyer 2009; Owens 2010; Squires and Kubrin et. al. 2005; White 1982). Across the United States schools located in low-income regions constantly face an array of incessant challenges, such as low funding, few resources, lower quality teachers, and the strain of serving great volumes of high-needs students (Calson and Cowen 2015; Murphy 2007; Owens 2010). Furthermore, the diffusive neighborhood effects are mirrored in the school environments, where students are not shielded from high-risk behavior and also not provided the same opportunities offered at schools located in regions of higher socioeconomic status (Brooks-Gunn and Duncan 2015; Finn and Rock 1997; Owens 2010; Ross and Mirowsky 2008).

Rather than acting as an instrument of opportunity and mobility, schools today have often become additional mechanisms enabling the reproduction of educational inequality and poverty. Logan et. al. (2012) performed the first national level study concerning the interwoven variables of race, class and geography of opportunity. The research found that racial minorities are much more likely attend high-poverty schools, where dropout rates are higher, academic achievement levels are lower, and behavioral problems are rampant, due to the strong relationship between race, class, and location. Logan concludes, “Public schools are not only separate but also unequal” (292). This conjecture begs the question of society—If the education system today is resulting in the reproduction of societal inequities, how can we ever expect to make strides in reducing poverty levels?

In fact, in one of the most renowned reports written on the equality of educational opportunity, James Coleman (1966) surmises that education, since its establishment as a standard and expectation in the United States, has ironically been at the root of societal inequity. In the 19<sup>th</sup> Century the notion of general educational opportunity for all children was first developed with the creation of the public school system; however, African American children received no educational opportunity from this and upper class children attended private schools instead of the public schools. Thus, the education system functioned instead to maintain the deep-rooted class structures of society (Carlson and

Cowen 2015; Coleman 1966). “The idea of a common educational experience implies that this experience has only the effect of widening the range of opportunity, never the effect of excluding opportunities...but it is clear that this is never precisely true” (Coleman 1966: 16). Today, although the U.S. education system prides itself on equal opportunity and a common core curriculum for schools, equality is far from the reality of the situation. As a result of the powerful neighborhood effects and environments influencing schools, the varying social contexts populating schools, and policies generating unequal funding and resources to different schools, the education system continues to act as a mechanism propelling, rather than disrupting, the cycle of poverty.

### ***School Behavior and Performance as Relating to Social Context***

The impact of social context and neighborhood effects on children’s school experience and engagement has been widely studied (Carlson and Cowen 2015; Griffin 2002; Wentzel 1993; White 1982). From birth children growing up in poverty often face an array of issues, challenges and negative influences day to day, such as domestic violence, neighborhood crime, dangerous living conditions, unhealthy eating, an overall environment of low-educational attainment, less parental involvement in their schooling, and poor English proficiency, among other examples (Brooks-Gunn and Duncan 2015; Hill et al. 2004; Murphy 2007). Growing up in such an environment spawns unfortunate repercussions in youth such as low aspirations, high-risk behaviors, emotional disabilities, behavioral problems, difficulty communicating with others, truancy in school, and increasingly poor health (Brooks-Gunn and Duncan 2015; Kearney 2007; Ready 2010). Therefore, not only do these students begin their educational endeavors on a lower playing field than children growing up with strong economic and social capital due to their social context, but they are also experiencing less constructive learning environments at school, lower expectations, and often receiving a lower caliber of education (Coleman 1966; Finn 1993).

Research examining how social context influences school outcomes reveals that an individual’s disadvantaged home and neighborhood circumstances can have many negative consequences for behavioral and academic performance in school (Espelage, Bosworth, and Simon 2000; Jimerson et al. 2000; Mendez, Knoff, and Ferron 2002; White 1982). Atzaba-Poria et al. (2004) provides extensive analysis illustrating the effects of exposure to particular risk factors (i.e. gender, IQ, self-worth, parenting and discipline style, family style, social support, SES, parental work experience, race) to the development of problem behavior. The study concludes that greater exposure to risk factors results in more behavior problems in schools; therefore, schools populated by high concentrations of students below of the poverty line encounter greater numbers poor behavior incidences, as their students are generally exposed to more risk factors.

Many past studies present similar findings, exhibiting strong correlations between SES, race, and discipline problems within schools (Finn 1993; Henry, Knight, and Thornberry 2010; Jimerson et al. 2000; Tobin and Terry 1996). Mendez corroborates, “It appears that students from lower socioeconomic home situations also have been disproportionately suspended from school, both historically and recently. Significantly, Skiba et al. (1997) confirmed the inequities noted above for race, gender, disability, and SES; Nichols et al. confirmed these same inequities for race, gender, and SES” (Mendez

2002: 261). Thus, it is clear that SES not only acts as a strong predictor of performance, particularly in terms of classroom grades and retention, but also as a strong predictor of elements of school behavior, including truancy, suspensions, dropout rates, and college attendance (White 1982).

Hill et al. (2004) explains the relationship between parent involvement, another element of social context, and school behavior and performance: “School behavior, achieving, and career aspirations, and parents’ roles in shaping these factors do not occur in isolation” (1493). Parents in poverty usually have low levels of education attainment, often disabling them from providing their children with the academic support needed. Additionally, they also face many obstacles in basic child rearing, due to their lack of resources and time. When children live in single parent, low-income homes, the lack of parent involvement often becomes an issue; no matter how involved a parent may wish to be in their child’s life, supporting a family with a sole source of income and most likely a long work day results in the inability to care for a child to the extent needed (Erickson and Goldthorpe 2002; Musick and Mare 2006). The effects of this variable on a child’s development are highly evident in school environments through the examination of disparities in behavior and performance.

The concept of stereotype threat acts as another influence on school behavior and performance amongst racial minorities (Steele 1997). Bryan Griffin (2002) presents a study in which Black and Latino populations exhibit academic disengagement in school, as social stigma and self-esteem factors negatively influence their participation in the classroom. Even when minority students present immense academic potential, the impact of implicit racial biases, differential treatment, or low standards within a school can have adverse effects on behavior and achievement. Furthermore, when one is surrounded by a culture of low achievement, it becomes very hard to break from that environment. The interconnected nature of risk factors influencing students and the allure of oppositional culture to many minority and low-income students often cultivates an atmosphere of defiance, disobedience, and low achievement in schools serving at risk populations (Farkas, Lleras, and Maczuga 2015; Jimerson et al. 2000; Noguera 2003; White 1982).

Special education needs offer another social dynamic within schools influencing behavior and performance outcomes. Students with Individualized Education Plans (IEP) tend to exhibit more outbreaks of poor behavior, often a result of emotional disorders or the buildup of frustrations relating to slow academic comprehension (Smith and Simpson 1989). Not only do these students face their own internal battles with their special education needs, but school environments can also present additional external challenges. Special education students are often separated from the greater body of students either due to their lacking social capabilities or a due to a more isolated class schedule. Additionally, special education students can also be victims of bullying in the school environment (Espelage et al. 2000; Tary and Sugai 1996). If a school’s IEP program does not institute its methods in a constructive manner, students’ IEP status can begin to define their identity, preventing greater achievement and provoking behavioral issues (Steele 1997). Landrum (2013) proposes that IEP programs focusing equally on the academic and emotional needs of students could be more successful in increasing educational attainment and decreasing poor school behavioral among special education students.

It is evident through previous literature that elements of social context and demographics have a profound relationship with school behavior and performance. As Coleman (1966: 325) concluded in his report on Equality of Educational Opportunity,

Taking all of these results together, one implication stands above all: that schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school.

While Coleman's statement holds true for many schools today, some have made strong efforts to overcome the neighborhood effects surrounding them and disrupt the reproduction of intergenerational low educational attainment. For example, Springs Charter works to provide its students with many opportunities away from school to enable them to see their potential outside of Harrison District Two and begin to develop goals for their futures. Every year each student goes on roughly two college visits so that they can become familiar with the idea of pursuing a college degree. Additionally, the honors students have the opportunity to attend REACH, a summer program at the local private school that provides students with mentors and the opportunity to experience more hands-on learning. The school also incorporates service trips to connect students with other non-profit organizations and important causes. Last, Springs Charter offers a "Family University" that holds classes throughout the year ranging from concentrations on healthy cooking, to budgeting, to helping parents learn how to best assist their children with homework.

In addition to providing new opportunities to the students and families, Springs Charter has implemented a system to encourage positive school behavior and engagement while also working to curb poor behavior, as an element of their strong focus on character:

- Students earn "Chrome" by demonstrating exceptional school behavior and can use it to purchase items at the school bookstore as they accumulate.
- Students receive deductions for poor behavior at school. 50+ deductions in one week results in an In School Suspension (ISS).
- Students also receive Referrals for poor classroom behavior. In this case, they are sent out of the classroom to the "Character Room" with the hope that they can constructively work through their problems with a school counselor.
- ISS can also be received if a student demonstrates severe misbehavior at school (3+ ISS incidences result in an Out of School Suspension).
- An OSS can also be received if a student partakes in a more violence-related incident at school (4+ OSS incidences will often result in expulsion).

While these efforts to provide a more constructive environment in terms of discipline and development may not always be effective with every student at the school, it is of paramount importance to continue to focus heavily on ways to better school behavior and performance outcomes. Establishing the underlying factors influencing perpetual poor performance and behavior in the school and seeking means to disrupt this cycle, has the potential to slowly reduce the reproduction of low levels of educational attainment amongst the population served by Springs Charter.



This research will be the first time Springs Charter has extensively analyzed school data in order to determine how it can utilize its resources and innovation to best serve the students. Middle school years are pivotal in a child's development. (Tobin and Sugai 1996). It is hoped that this research can shed new light on the topic of social context and school behavior and performance for Springs Charter, and that the results can enable the school to make informed decisions and steps forward to improve school behavior and performance. Through this analysis, Springs Charter can look for new avenues to build effective structures to disrupt the mechanisms reproducing low educational attainment and poverty.

### **Data and Methods**

I compiled the data for this study from School Insight, a database used by Springs Charter to store the majority of student information. The data on School Insight originates from registration forms filled out by families, surveys completed by families throughout the year, and behavior and performance records tracked by teachers. The dataset includes the records of the 457 middle school students, grades five through eight, attending Atlas Preparatory School for the first semester of the 2014-2015 school year. Data was kept confidential by removing the names and student ID numbers of individual students from the documents once the data was compiled.

Since the population attending Springs Charter is highly transient (the average length of stay at the school is a year and two months), the most recently completed semester's data best captures the current state of affairs at the school. Although a compiled collection of years of data would provide a more comprehensive analysis of trends in student behavior and performance in terms of social context and demographic variables, the 2014-2015 first semester data offers the most detailed and extensive records of students since the foundation of the school five years ago.

### ***Variables Defined and Means of Measurement***

#### ***Social Context in Focus***

To measure students' social context, demographics and family background characteristics various independent variables were selected as indicators: grade in school, race/ethnicity, gender, primary home language, Individualized Learning Plan, Free or Reduced Lunch status (FRL), residence type, and primary household guardian.

#### ***a. Socio-Demographic Measures***

The *Gender* and *Race* variables demonstrate how basic socio-demographic characteristics play out within the school environment at Springs Charter. Illuminating any potential gender or racial disparities within the school is critical in making the school a better learning environment and producing more positive behavior and performance outcomes across the student body.

### *b. Socioeconomic Measure*

Students' *Free or Reduced Lunch* status indicates which families have incomes near or below the poverty line. The FRL cut off for a family of four to be eligible to receive reduced lunches is a maximum monthly income of \$3,677 and a maximum monthly income of \$1,988 to be eligible for free lunches. FRL status is used as the most reliable form of an SES index, as it is the most direct measure of poverty status available to this study. In order to most effectively analyze the data, the FRL variable was dichotomized into students who pay full price for their meals vs. the students eligible to receive reduced or free meals.

### *c. Household Characteristics*

*Residency type* seeks to gauge the living conditions and home environment of the students. This variable is divided into three categories: *home*, *apartment/condo/duplex*, and *trailer home*. Each environment fosters a different living experience. For example, concentrated poverty and minority populations in low-income apartment complexes can create a hazardous living environment with increased crime, poor health and low educational attainment. Therefore, examining the neighborhood effects influencing students from these different environments could help Springs Charter recognize patterns illustrating which students face the most challenging living environments outside the classroom, and how this pertains to consequential behavior and performance outcomes.

A student's *primary household guardian* is a variable of considerable importance, as the primary guardian is the main caretaker, provider, and often the greatest influence for the Springs Charter student. The variable divides into the subcategories of *both parents*, *single parent only* (on the majority this group is filled with single mothers), and *other* (either a blended family or relatives). Examining how a students' home environment could potentially influence their behavior and performance at school could allow Springs Charter to create more efficient and focused structures that address issues stemming from family structure.

The *primary home language* of Springs Charter students is a revealing variable, as many students live in Hispanic households with parents or guardians that do not speak proficient English. This often impedes a child's ability to learn to speak, read, write, and comprehend the English language well. Furthermore, it inhibits their parents from being able to assist with schoolwork and often isolates these students more from the general English speaking population. A student's English Language Learners plan status is variable highly connected to primary home language, as it indicates which students struggle the most with the language barrier in the classroom. Examining the relationship between the language barriers and school behavior and performance outcomes might shed light on where the Springs Charter could focus more of its attention.

### *d. Education Plan*

The IEP status variable shows which students have special education needs and which students do not. Examining the relationship between IEP students and school

behavior and performance at Atlas will highlight whether the school's current special education programs are exhibiting positive or negative effects on school behavior and performance outcomes.

### ***Behavior in Focus***

To examine the extent of behavioral issues exhibited by Springs Charter students, variables analyzed include *attendance and truancy*, number of *referrals* from the classroom, number of *In School Suspensions (ISS)*, and number of *Out of School Suspensions (OSS)*. The behavior of students is a complex variable, as it is almost always spurred by some other circumstance; however it can also be analyzed as an independent variable influencing something like school performance or likelihood to dropout of school. Additionally, while some students may be at fault for acting out more than other in the school environment, racial biases in disciplining have also been shown to be prevalent in past literature. In this study behavior will, for the most part, be examined as a dependent variable so that the influences of students' demographic and home characteristics on school behavior and performance at Atlas can be explored. However, for the purpose of informing future studies, it is worth noting that behavior has multiple dimensions and can be looked at from many different angles.

The varying degrees of discipline measures received by students at Springs Charter often illustrate the extent of a student's behavioral issues and often the kind of behavioral issues exhibited. Referrals from the classroom are the lowest form of punishment in the dataset. Students are referred from the classroom when they are severely misbehaving during class time. This includes talking out of term, not following directions, being disrespectful, and disrupting the learning environment for other students. In school suspensions act as the second level of discipline within the school. Students often receive in school suspensions for accumulating referrals and discipline warnings, being defiant, acting in a continuously disruptive manner, or being insolent to teachers and classmates among other examples. Students may receive an out of school suspension for failing to complete an ISS, accumulating three ISS incidences, or exhibiting extreme misbehavior at school. These instances of extreme misbehavior most commonly include violent or aggressive behavior or creating an extreme disruption to the schools daily functioning. A student is expelled from Atlas if they continually act in manner putting the teachers and students around them at risk or if they do not respond to the schools disciplining process after all of the schools resources have been deployed.

Of the behavior variables, attendance/truancy is the most complex. Truancy is most often regarded as an element of behavior, as many low-income students disengaged from school will miss many days due to their lack of interest in attending and their parents lack of involvement in their schooling. Merely getting students to attend school can be one of the most difficult challenges faced by Springs Charter administrators. However, while not attending school is a choice for many detached students, other students do not attend school as a consequence of their adverse living environments, not due to their own determination to miss school. Therefore, truancy also acts as a mediating variable between social context and school behavior and performance in certain situations: when a students' social context (i.e. poor health, family problems, etc.) keeps them from attending school they often become disengaged and disconnected from the

school (Ready). This can result in a host of behavioral and low performance issues. While this study will examine truancy issues primarily as an element of problem behavior at Springs Charter, one should always keep in mind the multi-faceted nature of truancy and the many aspects of social context influencing student attendance.

### ***Performance in Focus***

To best represent and explore the academic performance of students I collected variables including students' GPA, the number of classes currently being failed by each student, and their position in either the regular or honors track. Similar to behavior, performance can be examined as an independent or dependent variable depending on the context of the study; for instance, continuous low academic performance could result in poor behavior at school and visa-versa. However, for the purposes of this study and examining the relationship between social context and school behavior and performance, performance will be analyzed as a dependent variable. At Springs Charter, all 5<sup>th</sup> grade students are assigned to the honors college; however, after 5<sup>th</sup> grade students are divided into two different programs based on their academic tracks. Higher performing students are assigned to the honors college and the remainder of the students are assigned to the regular college. GPA and the number of classes being failed by a student are both strong measures of academic performance. By exploring which students, in relation to social context, struggle the most in academic performance, Springs Charter will be more informed as to which cohorts amongst the student body need the most attention in the classroom.

### ***Methods of Analysis***

This study analyzes the social context and demographic characteristics of students at Springs Charter in relation to school behavior and performance. The descriptive statistics presented seek to provide a more informed picture of the school, so that the internal dynamics can be better understood. Table 1 displays raw numbers and calculated percentages of the student body for each of the independent variable examined throughout report. Multiple regressions are used as the main method of analysis throughout this research, as they allow one to control for variables in order to estimate each variable's unique effect on the outcome.

Poisson regressions<sup>2</sup>, suited to analyze count outcomes, are used to analyze the relationship between the social context variables and the behavior variables across four different models (Table 2). The coefficients, with the z-values below in parentheses, are listed in the regression outcome tables. Negative coefficients demonstrate that the estimated value of the given variable is less than the estimated count of the reference group and positive coefficients demonstrate that the estimated value of the given variable is greater than the estimated count of the reference group. Thus, higher coefficient values suggest greater behavioral issues. The asterisks alongside the coefficients show which independent variables, after running the regression, have a statistically significant

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<sup>2</sup> The goodness of fit test suggested that this data did not fit the Poisson regression models due to the complexity of the count variables examined. However, the models still provide a comprehensive and strong analytical lens to look at the relationship between social context and school behavior and performance.

relationship with the dependent variable. To examine performance (Table 3), three different forms of regressions were utilized. In Model 5 a Poisson regression is used once more, as the number of classes a student is currently failing acts as a count variable. Model 6 analyses GPA, an interval variable, through OLS regression. In this model positive coefficient values demonstrate a higher estimated GPA than the reference group. Table 4 presents three new models analyzing the factors influencing a student's entry into the honors college. Logit regressions are used because the dependent variable is dichotomous. In this model, strong negative coefficients demonstrate a lower likelihood of being in the honors college and strong positive coefficients demonstrate a greater likelihood of being in the honors college.

I will be reporting on the statistical significance of outcomes; however because the sample used for this study is the exact population of interest, one can also look directly to the regression coefficients to infer results from the data. Thus, while statistical significance is an important element in drawing conclusions, coefficients and tests of probability will also be used to examine the regression results.

## Results and Analysis

This section displays both the descriptive and analytical results. The first section reviews the descriptive statistics of the student body, the second and third sections examines the relationship of these independent variables to behavior and performance outcomes, and the final section presents an analysis of student entry into the honors college. Overall, this section seeks to highlight the relationships between the multitude of factors at play influencing the lives of Atlas students and their concomitant school behavior and academic performance.

### I. Social Context Overview

Table 1. Atlas Preparatory Middle School Student Body

Independent Variable		Number of Students (and Percent of Student Body)	
Age Measure			
	Fifth Grade	61	13.35%
	Sixth Grade	115	25.16%
	Seventh Grade	144	31.51%
	Eighth Grade	129	28.23%
Gender			
	Male	234	51.20%
	Female	223	48.80%
Race			
	White Non-Hispanic	50	10.94%
	Black Non-Hispanic	80	17.51%
	Hispanic	296	64.77%
	Other	29	6.35%
Socioeconomic Status Measure			
	Free Meals	367	80.31%
	Reduced Meals	43	9.41%
	Pay Full Meal Price	46	10.07%
Living Environment Measure			
	House	250	54.70%
	Apartment	132	28.88%
	Trailer	65	14.22%
Household Guardian			
	Both Parents	222	48.58%
	Single Parent	149	32.60%
	Other	86	18.82%
Primary Language Measure			
	English Spoken in the Home	272	59.52%
	Spanish Spoken in the Home	179	39.17%
	Other	2	0.44%
Learning Disability Measure			
	No IEP	413	90.37%
	IEP	44	9.63%

The Springs Charter middle school is highly reflective of its District Two surroundings, exhibiting high concentrations of minority and impoverished populations. The student body of 457 is 64.77% Hispanic, 17.51% Black Non-Hispanic, and only 10.94% White Non-Hispanic. Additionally, only 10.07% of students pay the full price of their school meals, 89.72% of students are in low-income families eligible for Free or Reduced Lunch. Only 54.70% of students reside in a house, the other 28.88% live in apartment complexes and 14.22% live in trailer homes. While there is a homeless population at Atlas, this is a difficult cohort to measure and keep track of, as they often live with relatives or move frequently. About 39.17% of the student body speaks Spanish

as their primary home language, which may contribute to language and learning barriers at Springs Charter; this indicates that a strong ELL program within the school is crucial to the academic performance of its students. The school serves about 44 students with IEPs, making up 9.63% of the student body. This means that these students are on an alternative, individualized learning tracks to enable them to get the most out of their classwork and keep up with their grade-level through receiving the individualized attention that they may need. The intent is that, through this form of intervention, these students can maintain the same behavioral and performance standards as their peers.

## II. Behavior

### a. Descriptive Results

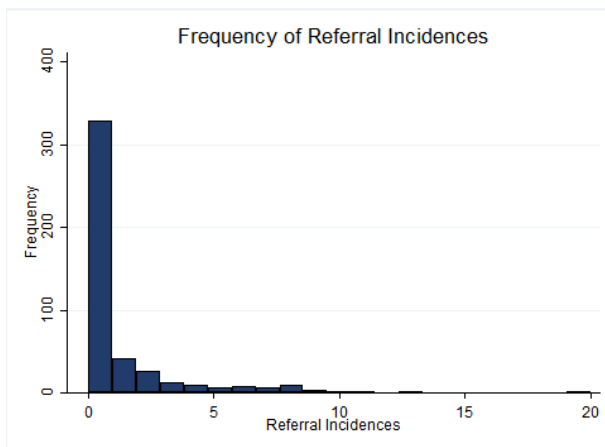


Figure 1. The Distribution of Referral Incidences Across the Student Body

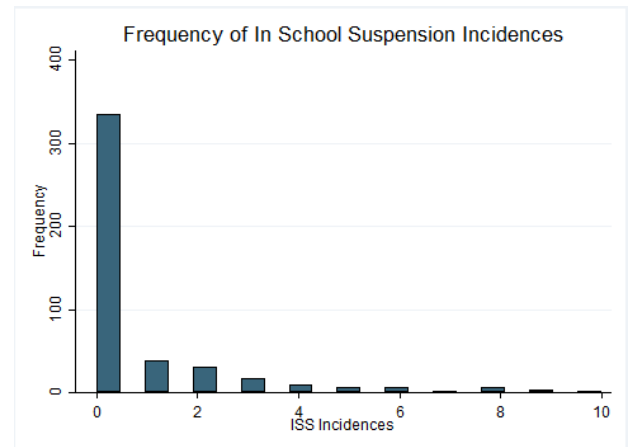


Figure 2. The Distribution of ISS Incidences Across the Student Body

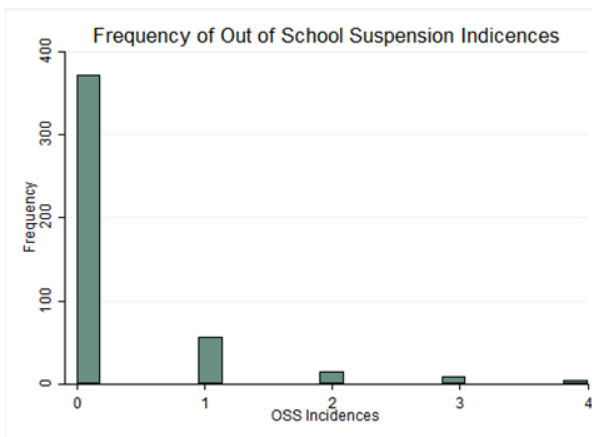


Figure 3. The Distribution of OSS Incidences Across the Student Body

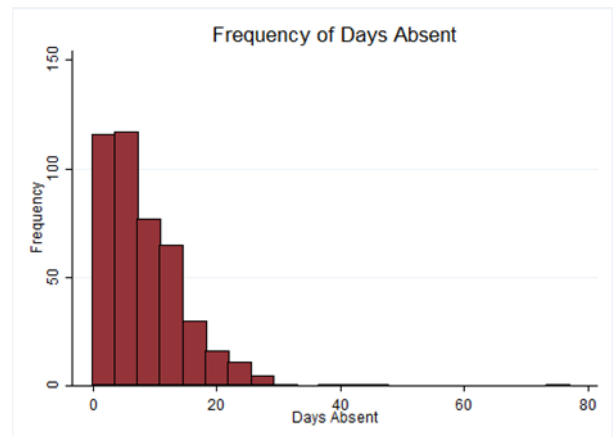


Figure 4. The Distribution of Days Absent Across the Student Body

About 28% of the middle school student body received one or more referrals, the lowest level of punishment, throughout the course of the first semester. The minimum number of referrals received by one student was zero, making up 72% of the student body, and the maximum number of referrals for one student was 20. Currently, the average number of referrals across the entire middle school student body is 1.01, these descriptive statistic results are displayed in more depth the Appendix. While the range of the number of referrals received is relatively large, Figure 1 illustrates how referrals are highly concentrated between zero and three, with numerous outliers exhibiting higher amounts. Only 10% of the student body received 4 or more referrals in the first semester.

About 27% of the middle school student body received one or more ISS over the course of the first semester. The maximum number of ISS incidences accumulated by one student was 10. About 19% of students had between one and three ISS incidences, while only a small portion of the student body exhibited more severe behavior issues, accumulating greater than three ISS incidences. The average number of ISS incidences is .79, illustrating the high concentration of ISS incidents between zero and one (Figure 2).

About 19% of the student body received one or more OSS, the most serious form of discipline measures taken, during the first semester. Only about 3% of the student body had three or more OSS incidences and only five students had four OSS incidences, the maximum number, usually resulting in expulsion. The mean of OSS incidences is .29, suggesting that majority of students received between zero and one OSS. (Figure 3).

Figure 4 shows the distribution of days absent across the student body. Truancy is a major challenge faced by Springs Charter, as student engagement and performance often decline, and behavioral issues spike, when a student misses numerous days of school. The mean number of days missed at Atlas in the first semester was 8.47. The minimum was zero days and the maximum was 77 days. About 36.98% of the student body exhibited signs of chronic truancy, missing 10 or more days. Finding a way to decrease truancy in the middle school could be a critical element to improving the behavior and performance of Springs Charter students.



*b. Multivariate Analysis Results*

Table 2. Multivariate Analysis of Social Context and School Behavior demonstrated by Poisson Regression Models

Independent Variable	Model 1 Referrals	Model 2 In School Suspension	Model 3 Out of School Suspension	Model 4 Attendance and Truancy
<i>Age Measure (ref: 5<sup>th</sup> grade)</i>				
Sixth Grade	-.300 (-1.90)	-.389* (-2.20)	.112 (0.35)	.061 (1.01)
Seventh Grade	-.027 (-0.18)	-.229 (-1.37)	.138 (0.44)	.158** (2.75)
Eight Grade	-.250 (-1.61)	-.203 (-1.20)	.200 (0.64)	.319*** (5.60)
<i>Gender (ref: male)</i>				
Female	-.282** (-2.76)	-.045 (-0.38)	-.392* (-2.01)	.077* (2.29)
<i>Race (ref: White Non-Hispanic)</i>				
Black Non-Hispanic	.403 (1.81)	-.424 (-1.70)	-.130 (-0.35)	-.284*** (-4.72)
Hispanic	.451* (2.15)	.082 (0.39)	.078 (0.23)	-.308*** (-5.41)
<i>Socioeconomic Status Measure (ref: pays full meal price)</i>				
FRL	.705*** (3.07)	.781** (2.69)	1.08* (2.10)	.119* (1.97)
<i>Living Environment Measure (ref: house)</i>				
Apartment	-.042 (-0.39)	.245* (1.98)	.807*** (3.90)	.155*** (4.10)
Trailer	-.506*** (-3.03)	-.152 (-0.85)	.322 (1.05)	.128* (2.46)
<i>Household Guardian (ref: both parents)</i>				
Single Parent	.444*** (3.92)	.504*** (3.92)	.456* (2.10)	.267*** (6.98)
Other	.551*** (4.11)	.361* (2.26)	.369 (1.39)	.063 (1.31)
<i>Primary Language Measure (ref: English)</i>				
Spanish	.382*** (2.90)	.352** (2.37)	-.014 (-0.17)	.004 (0.09)
<i>Learning Disability Measure (ref: no IEP)</i>				
IEP Status	.348* (2.22)	.406* (2.22)	.619** (2.28)	-.162* (-2.37)

Note: Numbers in parentheses are z-values

\*p<.05    \*\*p<.01    \*\*\*p<.005

Table 2 examines the relationship between the various aspects of social context and demographics shaping the lives of Springs Charter students and the consequential behavior displayed in school through the lens of four different models. Only a handful of independent variables illustrate a consistent positive or negative effect across the behavior measures, however the lack of statistical significance in certain categories also imply interesting findings for Springs Charter.

Across the age gradient, discipline measures resulting from incidences of poor behavior are consistent in grades five through eight. However, as students increase in age there is also an increase in the estimated number of days absent. Comparative to the fifth grade, the seventh and eighth grades exhibit a statistically significantly greater number of school days missed (Model 4). This suggests that students become increasingly truant as they get older.

Models 1 and 3 show that female students, on average, have lower numbers of referrals and OSS incidences than their male counterparts. This suggests that they have less incidences of severe misbehavior in the classroom and are less involved in suspensions relating to violent acts. On the other hand, females are involved in relatively the same amount of ISS incidences and demonstrate the same levels of truancy as their male peers.

Throughout Table 2 the race effect is either absent or simply does not exhibit a consistent positive or negative effect across the behavior measures. The statistical significance and strong positive coefficients reported Model 1 suggest that Hispanic and Black Non-Hispanic students have an increased estimated number of referrals from the classroom compared to their White Non-Hispanic peers. However, Model 4 shows that both Hispanic and Black Non-Hispanic students appear to miss less days of school than their White Non-Hispanic peers. While the correlation between the minority cohort of the student body and the estimated count of referrals is positive, their relationship to days absent is negative, thus illustrating the variable and somewhat irregular effects of race on school behavior at Springs Charter. Previous literature consistently reports significant positive associations between minority status and poor school behavior; interestingly, this research shows no profound race effect in this aspect of the school.

Students' Free or Reduced Lunch status demonstrates statistical significance across all four of the behavioral measures (Models 1-4). Amongst the cohort of students receiving free or reduced meals, the estimated number of referrals, ISS incidences, OSS incidences, and days absent is higher than the students paying the full price for meals. These results suggest that SES is a strong predictor of school behavior at Springs Charter.

The influence of students' living environment appears to be significantly associated with school behavior. Living in an apartment complex demonstrates adverse effects on students' school behavior, as models 2, 3 and 4 show a higher estimated count of ISS incidences, OSS incidences and days absent for that cohort compared to their peers living in houses. Living in a trailer also exhibits adverse effects on students but generally appears to have variable influences on behavioral; students living in trailer homes showed a decrease in the estimated number of referrals, but a significant increase in the estimated number of days absent in comparison to students living in a house.

Household guardian proves to be an important variable regarding school behavior. Students living with single parents or relatives/blended families display a strong, positive relationship with each of the behavioral variables shown in Models 1-4. Therefore, in relation to their peers living with both parents in the same household, these students exhibit an increase in the estimated number of poor behavioral incidences at school across each kind of discipline measure.

Models 1 and 2 show that students living in Spanish speaking households have a higher estimated count of referral and ISS incidences compared to students who primarily speak English in the home. The significant positive association between Spanish as a

primary home language and increased incidences of poor behavior suggest that the impact of a language barrier in the school environment may impact students' behavior in the classroom.

The learning disability measure exhibits a significant positive association with behavior across all four models. Students with Individualized Learning Plans demonstrate an increase in the estimated number of referrals, ISS incidences, OSS incidences, and days absent from school, in relation to their peers without IEPs.

## II. Performance

### a. Descriptive Results

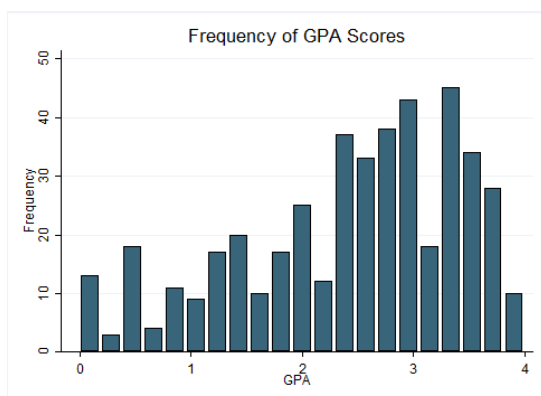


Figure 5. The Distribution of GPA Scores Across the Student Body

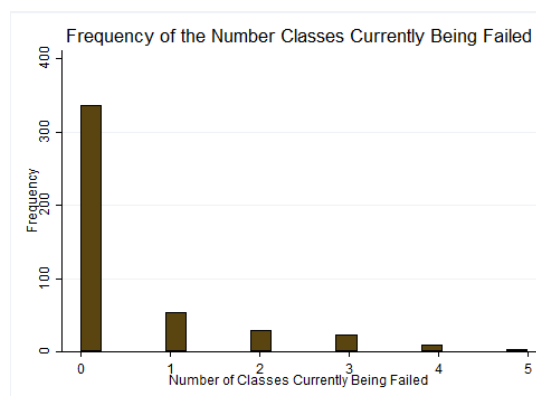


Figure 6. The Distribution of the Current Number of Classes Being Failed per Student Across the Student Body

The average GPA at Atlas Preparatory Middle School is 2.44. 73.52% of the student body is not currently failing any classes, while about 8.10% of students are failing three or more classes. The average number of classes currently being failed by a single student is 0.53. Thus, the majority of students are passing all five of their classes, however there is a small cohort of the student body failing over half of their classes (Figure 6). Among the student body of 357, 10 students are Summa Cum Laude (10.19%), with GPAs of 4.0; 60 students are Magna Cum Laude (13.13%), with GPAs of 3.5 and higher; and 43 students are Cum Laude (9.41%), with GPAs of 3.25 and above. Therefore the remaining 344 students (75.27%) have GPAs below 3.25 (Figure 5).

*b. Multivariate Analysis Results*

**Table 3. Multivariate Analysis of Social Context and School Performance demonstrated by Poisson and OLS Regression Models**

Independent Variable	Model 5 Number of Classes Currently Failing (Poisson Regression)	Model 6 GPA (OLS Regression)
<i>Age (ref: 5<sup>th</sup> grade)</i>		
Sixth Grade	-.779*** (-2.89)	.112 (0.71)
Seventh Grade	.424* (1.99)	-.008 (-0.05)
Eight Grade	.311 (1.44)	.087 (0.56)
<i>Gender (ref: male)</i>		
Female	-.407*** (-2.94)	.349*** (3.61)
<i>Race (ref: White Non-Hispanic)</i>		
Black Non-Hispanic	.309 (0.97)	-.057 (-0.31)
Hispanic	.216 (0.70)	-.170 (-1.00)
<i>Socioeconomic Status (ref: pays full meal price)</i>		
FRL	.299 (1.11)	-.282 (-1.68)
<i>Living Environment (ref: home)</i>		
Apartment	.441*** (3.02)	-.126 (-1.15)
Trailer	-.257 (-1.24)	.006 (0.04)
<i>Household Guardian (ref: both parents)</i>		
Single Parent	.112 (0.75)	-.181 (-1.62)
Other	.098 (0.50)	-.193 (-1.45)
<i>Primary Language (ref: English)</i>		
Spanish	.844*** (4.43)	-.222 (-1.75)
<i>Learning Disability (ref: no IEP)</i>		
IEP	.535*** (2.63)	-.717*** (-4.19)

Note: Numbers in parentheses are z-values

\*p<.05    \*\*p<.01    \*\*\*p<.005

Table 3 represents the relationship between the social context and demographic characteristics influencing the lives of Springs Charter students and academic performance within the middle school (Models 5 and 6). Academic performance is measured by the current number of classes a student is failing and GPA. Examining the same independent variables representing social context across different measures of performance, allows for more accurate conclusions to be drawn about the relationships between the attributes of Atlas students and their academic performance. Similar to the behavior results, only a small number of independent variables illustrate a consistent positive or negative effect across the performance measures.

Generally, academic performance exhibits consistency across the grade levels; Model 5 suggests that the sixth grade has a decrease in the estimated number of failed classes compared to the fifth grade and that the seventh grade has an increase in the estimated number of failed classes compared to the 5<sup>th</sup> grade. However, these varied results may be a reflection of the grade cohorts being examined, as this study does not look at the performance of each grade over time. Grade cultures can develop within schools, resulting in differing degrees of behavior issues and levels of academic performance between grades.

Models 5 and 6 illustrate that being female has a significant, positive relationship with academic performance. Compared to their male peers, females have a higher estimated GPA and a lower estimated number of failed classes.

While the race effect does not exhibit statistical significance, the strong regression coefficients suggest that the minority students at Springs Charter have slightly lower estimated overall performance outcomes compared to their White Non-Hispanic counterparts (Models 5 and 6).

Similarly, FRL status falls just outside the range of statistical significance in a two-tailed test. However, the relatively strong positive coefficient representing the relationship between FRL and classes failed and the negative coefficient representing the relationship between FRL and GPA suggest that students eligible for free or reduced meals have lower estimated performance levels relative to students paying the full price of their meals.

The social context of one's living environment exhibits statistical significance in Model 5 and a moderately strong regression coefficient in Model 6 regarding the relationship between apartment complexes and performance. Students living in apartment complexes have a higher estimated count of classes failed and lower estimated GPAs compared to students living in a house.

While the two-tailed test falls short of statistical significance, the regression coefficients suggest that students living in single parent households appear to have lower levels of estimated academic performance relative to students living with both parents. Model 5 shows that students living in single parent households have a slightly higher estimate of classes failed and Model 6 demonstrates that students living in a single parent households have a lower estimated GPAs, compared to their peers living with both parents in the same household.

The primary language variable exhibits a significant association with academic performance in Model 5 and a strong regression coefficient in Model 6. Model 5 shows that students living in Spanish speaking households have a higher estimated count of classes failed compared to students who primarily speak English in the home. Similarly, Model 6 suggests that students living in Spanish speaking households also have a lower estimated GPA.

Similar to the behavior results, the relationship between IEP status and performance exhibits statistical significance across all measures of academic performance (Models 5 and 6). Thus, students with IEPs demonstrate a higher estimated count of failed classes and a lower GPA, compared to students without IEPs.

### *In Depth Analysis of Race in the Honors College*

Given the lack of a strong, apparent race effect throughout the middle school in terms of the behavior and performance variables examined above, one would expect no notable race effect when looking deeper into the racial makeup of the regular vs. the honors college. For instance, when the relationship between race and behavior is examined, there are inconsistent, variable effects showing both positive and negative outcomes. When the relationship between race and GPA is examined, no overwhelming effects are evident. However, when examining the distribution of race across the regular college in comparison to the honors college, there appear to be discrepancies in racial representation. Figure 7 illustrates how, compared to the White Non-Hispanic Students, Black Non-Hispanic students and Hispanic Students must over perform to a certain degree to gain entry to the honors college. Although these two cohorts show a greater range in academic performance, both GPA averages and interquartile ranges are higher than those of the White Non-Hispanic honors college students.

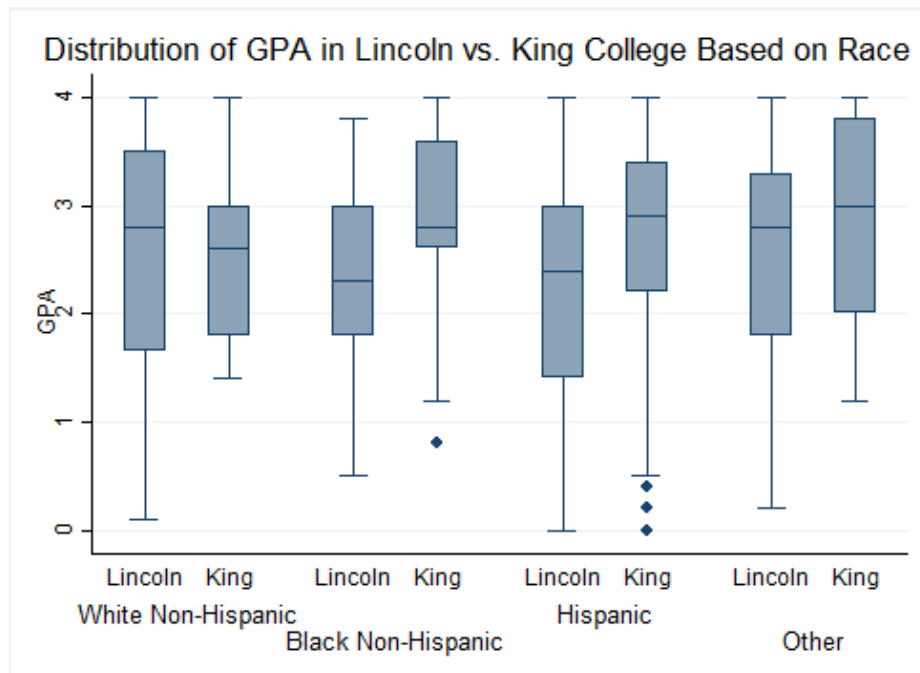


Figure 7. The Distribution of GPA Scores in Lincoln vs. King College in Relation to Race

In order to discern the true potential disparities suggested in the descriptive statistics in Figure 7, a multiple regression was run to examine the different influences of academic performance, behavior, race, and gender on entry into the honors program. Model 1 shows that performance and measures of behavior exhibit statistical significance in relation to the honors college. Therefore, performance and behavior both strongly explain a student's place in either the regular or honors track. Model 2 incorporates race and gender into the model, illustrating that even when taking performance and behavior variables into account, the race effect persists. Although the two-tailed test falls outside of statistical significance for the Black Non-Hispanic cohort, its coefficient of  $-.773$

suggests that Black Non-Hispanic Students are less likely to be in the honors college due to factors unexplained by the model. After running a margins test of probability it was determined that Black Non-Hispanic Students have a 44.58% chance of being in the honors college while White Non-Hispanic Students have a 63.53% change of being in the honors college, even when behavior and performance are held constant at their means. Similarly, the Hispanic cohort showed statistical significance in the regression results. The regression coefficient of -.827 suggests that Hispanic students are also much less likely to be in the honors college. The margins test of probability showed that Hispanic students only have a 43.24% chance of being in in the honors college . When ELL status is added to the regression in Model 3 (to control for the Spanish-speaking cohort of the student body), it ends up explaining much of the low probability of Hispanic entry into the honors college. However, when a margins test of probability is run on the ELL cohort of the student body, it shows that ELL students only have a 32.62% chance of being in the honors college (margins data is further outlined in the Appendix). This raises the question as to whether ELL students are provided with the same academic opportunities as their non-ELL peers. While left relatively unexplained by the model, it is clear that a race effect is present in determining a student's entry into either the regular or honors college.

**Table 4. Logit Regression Analysis Showing Effects of Independent Variables on Entry into King College**

Independent Variable		Model 1	Model 2	Model 3
<b>Performance</b>				
	<b>GPA</b>	.417* (2.53)	.358* (2.13)	.294 (1.74)
	<b>Failing</b>	.786* (2.25)	.710* (2.02)	.609 (1.73)
<b>Behavior</b>				
	<b>Referrals</b>	-1.185*** (-3.37)	-1.22*** (-3.41)	-1.232*** (-3.40)
	<b>ISS</b>	.141 (0.38)	.132 (0.35)	.091 (0.24)
	<b>OSS</b>	-.904* (-2.33)	-.875* (-2.22)	.888* (-2.22)
	<b>Truancy</b>	.039 (0.16)	-.013 (-0.05)	-.027 (-0.11)
<b>Gender (ref: Male)</b>				
	<b>Female</b>		.148 (0.65)	.056 (0.24)
<b>Race (ref: White Non-Hispanic)</b>				
	<b>Black Non-Hispanic</b>		-.773 (-1.66)	-.785 (-1.69)
	<b>Hispanic</b>		-.827* (-2.01)	-.292 (-0.66)
	<b>Other</b>		-.129 (-0.22)	-.122 (-0.21)
<b>Language (ref: no ELL plan)</b>				
	<b>ELL Plan</b>			-.971*** (-3.46)

Note: Numbers in parentheses are z-values

\*p<.05 \*\*p<.01 \*\*\*p<.005

## **Discussion and Conclusion**

This is the first time Springs Charter has used school data to examine the relationship between students' social contexts and demographics and behavior and academic performance exhibited within the middle school. By analyzing the individual level factors contributing to poor behavior and academic performance, Springs Charter can make informed decisions on how to best improve their approaches to serving the student body. By more directly addressing the apparent issues amongst certain cohorts within the middle school, it is hoped that Atlas can begin to further disrupt the cycle of low educational attainment among the population they serve in Harrison School District Two.

While many of the conclusions drawn from this study agree with previous literature in many aspects, some of the results exhibit uniqueness to Atlas Preparatory School. The relationship between SES and behavior exhibits significance across the behavior measures. Additionally, SES suggests a relatively strong relationship with the academic performance variables through the regression coefficients. The strong relationship demonstrated between FRL, behavior and performance supports findings in previous literatures (Factor et al. 2011; Finn 1993; Ross and Mirowsky 2008; White 1982). The associations between SES, behavior, and performance suggest that the lower income cohort of students at Atlas may still need increased attention, support, or potentially even different methods of discipline to curb the higher estimates of poor school behavior incidences (Jimerson et al. 2000; Tobin and Sugai 1996; Mendez et al. 2002). While it is difficult to pinpoint the exact factors and aspects of low SES contributing to higher rates of poor behavior and performance, raising awareness to this disparity will allow for more focused attention on the issue and hopefully enable possible solutions to be developed.

Consistently significant across the behavior and performance variables, students living in single parent households display higher rates of behavioral and performance issues, comparative to students living in a home with both parents. Additionally, students living with relatives or in a blended family also have higher estimated counts of behavioral issues. The strength and consistency of this measure across the dependent variables suggest that the challenges these students face in the home interfere immensely with their school experience. While the reasons as to why single parent homes exhibit these powerful relationships with school behavior and performance could attributed to multiple factors, they are often a result of the often more unstable living environment fostered in low income, single parent homes (Erickson and Goldthorpe 2002; Hill et al. 2004). Children residing in these environments often do not receive the attention or support needed, as their parent is also working to provide for the family (Bowles and Nelson 2015; Brooks-Gunn and Duncan 2015; Musick and Mare 2006). Springs Charter already provides immense resources for its families; this information could be utilized to create programs focusing more specifically on providing resources for its single-parent families and in assisting students living in single parent households in their initial entry into the school.

Students with Individualized Education Plans, due to their special education needs, have significantly higher estimated counts of poor behavior incidences and low



performance compared to students on a regular learning track. Special education needs most likely directly inhibit performance, as students needing the individualized track learn and absorb information in a different way and at a different rate than their peers (Smith and Simpson 1989). Additionally, depending on the degree of the IEP needs, some students are also battling immense learning, behavioral, or emotional disorders, thus providing extreme barriers in achieving the same levels of academic success as their peers. While some of the behavior issues exhibited by IEP students may stem from their greater academic and emotional needs, behavioral issues arising from frustrations of their different learning needs or the impacts of bullying could also be the case (Espelage 2000; Steele 1997). The strong relationship between IEP status, behavior and performance suggests that Springs Charter could focus greater energy on building a stronger IEP program that supports students through their academic, behavioral and emotional challenges (Landrum et al. 2003).

Students speaking Spanish as their primary household language also generally exhibit greater incidences of poor behavioral and lower academic performance. Specifically, these students are sent out of the classroom more, have more ISS incidences, are failing more classes, and have lower overall GPAs. In regards to academic performance, lacking English proficiency in the classroom has strong implications on a students' ability to perform well. Behaviorally, not only can a lack of comprehension and positive results on assignments in the classroom give rise to poor reactions from students, but language barriers can also spawn incidences of poor behavior due to raised frustration, misunderstandings, or conflicts in the social setting (Farkas et al. 2015; Griffin 2002; Steele 1997). Springs Charter has an ELL program that is developing and growing from year to year; as it continues to become stronger, it is hoped that the significant relationships between primary home language and school behavior and performance diminish over time.

The regression results show that students living in apartment complexes appear to have a greater number of ISS incidences, OSS incidences, days absent, classes failed and lower GPAs. Compared to the environment cultivated in a house, low-income apartment complexes often have increased exposure to risk-behavior, crime, and lower levels of safety due to the high concentration of poverty in the buildings (Bowen and Bowen 1999; Brooks-Gunn and Duncan 2015; Logan et al. 2012). The exposure to this adverse environment could be a potential explanation for the increased poor behavior and low academic achievement demonstrated amongst this cohort of students in the school (Beal et al. 2001; Deven and Cowen 2015; Squires and Kubrin 2005).

In regards to gender, females at Springs Charter appear to be sent out of the classroom less than their male peers and they exhibit less involvement in violence-related suspensions. Females are also failing a significantly lower estimated number of classes than their male peers and generally have higher estimated GPAs. This supports the literature showing that girls often exhibit higher achievement in school and lower rates of behavioral issues during middle school years (Alexander et al. 2008). The lower count of referrals and higher academic performance shown in females suggests that students more involved in their academics behave better in the classroom and visa versa. While females at Springs Charter are still involved in a high number of behavioral incidences, the issues that do arise usually pertain to ISS incidences and deductions in the classroom. In order to reduce the behavior and achievement gap, implementing new ways to increase

academic engagement and incentives to achieve amongst the male cohort could have significant effects.

The results revealed through the in-depth analysis of race have immense potential in terms of making Springs Charter a more constructive learning environment for its students. From first glance, the race effect that is pervasive in most schools today appears to have little prevalence at Atlas (Beal et al. 2001; Mendez et al. 2002; Noguera 2003). While the regression outcomes show that the minorities have a higher estimated count of referrals compared to their White Non-Hispanic counterparts, minorities also appear to have a lower estimated count of days absent. Academically, the regression coefficients suggest that minorities perform slightly lower than their White Non-Hispanic peers.

Due to the overall lack of consistent positive and negative effects of race across the dependent variables, the results suggesting a lower likelihood of minority entry into the honors college did not appear striking at first glance. However, greater attention was drawn to the issue when the descriptive statistics also suggested that there might be disparities in racial representation in the honors college. After further pursuing answers to this matter through the multivariate analysis, the results demonstrated that Black Non-Hispanic and Hispanic students are underrepresented in the honors college. Furthermore, as illustrated in Figure 7, these minority students also appear to have to overachieve to a certain degree to gain entry into the college.

This result is one very worthy of attention, as the racial disparities in the honors college exist even after controlling for behavior and performance. This raises the question as to why minority students have a lower probability of gaining entry into the honors college. These outcomes support the literature, in that students' race often influences how they are tracked within schools (Richeson and Nussbaum 2004). The differential treatment of different racial cohorts can perpetuate the risks associated with stereotype threat and result in self-fulfilling prophecies, as minority students begin to see themselves as lower achieving students (Matthew 2011; Steele 1997). This functions to maintain current structures of inequality today and perpetuate the low-educational attainment of minorities in low-income regions (Coleman 1966). While this may or may not be a factor influencing the underrepresentation of minority students in the honors college at Springs Charter, it is important to draw attention to the unexplained issue so that it can be further studied and addressed.

This research presents an overview of the individual level social factors contributing to behavior and performance at Springs Charter. Identifying the roots and establishing means of breaking the patterns of poor behavior and low academic performance is critical in creating positive change within the school. If structures can be created or altered within the Springs Charter, to better serve certain cohorts of students that are visibly in need of support, it is hoped that behavioral incidences will decline and achievement levels will continue to rise. While the 2014-2015 semester data provides a strong analysis of the current relationships in the student body regarding behavior and performance, future research examining these relationships as trends over time with several years' worth of data could provide more insightful results. Particularly, looking at the duration of time a student has been at Atlas will be a significant variable in the future in terms of determining the effectiveness of certain structures within the school on behavior and performance. A major question raised in literature studying schools in difficult neighborhoods asks whether positive school effects can overcome adverse

neighborhood effects (Owens 2010). Examining whether the length of time students' spend at Atlas impacts behavioral and performance records over time could show whether current structures and programs within the school are effective. The continued diligence in the collection of data at Springs Charter will be paramount over the years in enabling the school to constructively analyze their outcomes, make changes, and continue to progress at the forefront of innovative charter schools in disrupting the cyclical nature of low educational attainment in Harrison School District Two.

## Appendix

Tables 5 and 6 of the appendix display the descriptive statistics discussed in the Results and analysis section of the report:

Table 5. General School Behavior Overview

Behavior Report	Mean (Per one student)	Minimum (Per one student)	Maximum (Per one student)	Total Accumulated Incidences
Referral	1.01	0	20	463
ISS	.79	0	10	360
OSS	.29	0	4	34
Expulsion	.05	0	1	25

Table 6. General School Performance Overview

Academic Performance	Mean (Per one student)	Minimum (Per one student)	Maximum (Per one student)
Number of Classes	0.53	0	5
Failing GPA	2.44	0.0	4.0

Table 7 shows the margins predictions discussed in the Multivariate Analysis section of the report:

Table 7. Prediction of Entry into the Honors College Based on Race and ELL Status

Independent Variable	Margin (Predictions of entry into the honors college)
<b>ELL Status</b>	
<b>No</b>	56.11%
<b>Yes</b>	32.62%
<b>Race</b>	
<b>White Non-Hispanic</b>	63.53%
<b>Black Non-Hispanic</b>	44.58%
<b>Hispanic</b>	43.24%

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