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Katherine Clark April 4, 2025

Home is Where the Heart Learns:
The Impact of Affordable Housing on School Attendance

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Abstract

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By Katherine Clark

This study investigates the relationship between federally subsidized affordable family housing and school attendance among economically disadvantaged elementary students, predominantly Black, in Fulton County Schools (FCS) in metro Atlanta. Utilizing a generalized synthetic control model and qualitative analyses, the research identifies a significant positive association: introducing subsidized family housing in elementary school zones leads to an immediate and substantial increase in student attendance. Specifically, a new subsidized family housing development in an elementary school zone is associated with an average 7.74% point increase in the percentage of economically disadvantaged students with strong attendance (missing 5% or fewer school days), with this effect concentrated in the first two years post-intervention (8.61% in the first year, 9.48% in the second). These overall effects are positive for Black students as well, though lessened in magnitude and significance (ATT=3.12, p=0.138). Despite limitations such as a limited number of qualifying family housing developments and constrained outcome measures, the findings clearly underscore the essential role of stable, affordable housing in improving educational outcomes. Qualitative insights from FCS homeless liaisons, social workers, and a South Fulton housing nonprofit director confirm this, and illuminate the mechanisms through which stable housing allows students to thrive in school. The results support policy recommendations to increase investment in affordable family housing initiatives, as a tool to mitigate persistent educational and racial inequities through enhanced child well-being.

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Introduction

Secure and affordable housing is a critical social determinant of child well-being, significantly influencing health educational outcomes and overall family stability. Housing instability and unaffordability place substantial stress on families, often resulting in frequent residential moves, homelessness, and associated disruptions in children's schooling (Leventhal 2010; Schapiro 2021). Students facing housing instability often experience heightened absenteeism, diminished academic performance, and increased social and emotional challenges, underscoring the connection between stable housing and child development (Hanushek et al. 2004; Lopoo 2016; Mehana and Reynolds 2004). Existing literature proposes that affordable, stable housing improves child outcomes directly by reducing school absenteeism and indirectly by mitigating family stressors associated with economic hardship (Linver et al. 2002; Tapper 2010). Studies consistently highlight that affordable housing stabilizes family dynamics, reduces transience, and improves access to supportive services and networks. By alleviating housing-related stress, parents are better able to engage in supportive parenting practices, further promoting improved emotional and academic well-being among children (Desmond 2018; Lundberg et al. 2019).

This research furthers investigation into the impact of federally subsidized affordable housing developments on child well-being, with a specific focus on educational outcomes within Fulton County Schools (FCS) in Georgia. The primary research question guiding this study is: "What is the impact of affordable housing on child well-being, particularly school attendance?" To answer this, the study employs a generalized synthetic control (GSC) methodology to evaluate the causal effects of introducing family-targeted affordable housing developments on students' school attendance patterns. In particular, the analysis focuses on measuring attendance

outcomes through the percentage of economically disadvantaged students exhibiting strong attendance (missing 5% or fewer school days annually), and through the proportion of Black students exhibiting strong attendance. The research methodology integrates this analysis with qualitative insights obtained through interviews with Fulton County Schools homeless liaisons, social workers, and a South Fulton housing nonprofit official. These qualitative components demonstrate the practical school and student-level impacts of housing instability, supporting an understanding of how theories of absenteeism among housing-insecure students manifest in Fulton County. It hopes to demonstrate the valuable implication that increased affordable housing in a school zone increases school attendance, particularly among economically disadvantaged and Black children.

Background

Growing up in Poverty

One of the first characteristics placed upon a child is where they grow up. An increasing body of research indicates that this decision significantly affects their life outcomes, spanning economic mobility, health, and education. In particular, moving to a lower-poverty neighborhood before the age of 13 increases college attendance, future income, and reduces single parenthood rates (Chetty 2016). Multiple studies examining the HUD Moving to Opportunity (MTO) program, a randomized voucher assignment experiment, demonstrate a benefit to the family as well. Moving out of a high-poverty area increases the mental and physical health of adults and self-reported well-being and safety (Kling et al. 2007; Ludwig et al. 2013). However, the outcomes for children vary by gender; the disruption from moving can cause adverse effects in the short-term, especially among male youth. Analyses of the MTO experiment found no significant impact on education outcomes for youth, despite prior beliefs that students benefit

from switching to a higher quality school. Many of these studies focus on test scores as an outcome and find little effect; the existing lag in academic achievement among children in poverty accumulates over time and merely moving to a better school doesn't address the need to catch up in curriculum. Additionally, MTO families were "information poor" and faced barriers to successfully mobilizing neighborhoods with their vouchers (Briggs 2008). Focusing on other school outcomes finds that switching from a low-performing school increases high school graduation and attendance rates, and self-reported safety and teacher trust (Allensworth 2017). Further analysis of MTO experiment outcomes found that existing childhood exposure to the causal effects of their neighborhoods was the largest driver of null results; neighborhood effects operate primarily through "developmental" effects in childhood–indicating the importance of early housing interventions (Chetty 2016).

Gennetian (2012) introduces the idea of a "double disadvantage"– poor children growing up in high-poverty neighborhoods face the combined negative effects of growing up in concentrated poverty on a low income. Growing up in poverty is a powerful social determinant of health that affects children's access to safe housing and healthy food, healthcare services, educational opportunities, and non-toxic air and water (Healthy People 2025). Only 41% of full-time Black workers and 37% of full-time Hispanic workers in Georgia make enough to meet United Way's household survival budget, an amount representing the income needed in Georgia to afford housing, child care, transportation, food, and health care (United Way 2025). In Fulton County, Georgia, 50% of residents are rent-burdened, i.e. paying more than 30% of their annual income on rent (ACS 2023). Low-income, cost-burdened renters spend about $200 less each month on food and health care than renters who are not cost-burdened (Ellen 2015). This can translate into worse health outcomes for those renters and their dependents. Furthermore,

Schwartz (2016) finds a causal relationship between repeated exposure to neighborhood violence and lower test scores among 4th-8th graders, indicating how one's home environment is carried into the classroom. A key component of improving personal and neighborhood safety is affordable housing: basic needs like shelter must be met before supportive services can be expected to make a permanent difference.

What is becoming increasingly apparent is that where one grows up, an uncontrollable decision in the life of a child, has an immutable effect on life outcomes including future earnings, graduation rates, exposure to violence, and mental and physical health. This impact exists regardless of any observable individual differences, such as gender, race or class. Costs of living, like rent affordability and groceries, in safer neighborhoods effectively segregates rich neighborhoods from poor ones, making this transition nearly impossible for the lowest-income households without assistance. Voucher-based rent assistance may benefit the individuals who move, but neglect to address these existing areas of concentrated poverty and the remaining millions of individuals within them. This issue won't change without community affordable housing development to provide a safe and affordable home as cycles of poverty are broken, aided by supportive services to solidify this mobility.

Federal Subsidized Housing Placement

Federally subsidized housing– public housing, Housing Choice Vouchers (HCV), and Low-Income Housing Tax Credit (LIHTC)– are primarily located in low-opportunity neighborhoods, despite intentions otherwise. Their placement is often constricted by political, social, and economic pressures to site them in poorer neighborhoods where the land is cheaper and resident opposition is less. This limits the observability of household mobility, yet demonstrates the importance of studying the impact of affordable housing on the community it is

built in. The model of traditional public housing, those properties built and managed by government housing agencies, is declining and being replaced by subsidized housing measures like LIHTC or HCV. LIHTC developments are privately developed and managed yet must maintain a certain amount of low-income units, while HCV allow recipients to choose their apartment building, where a public housing agency then enters a rent payment agreement with the private landlord. While the reduction in public housing may alleviate some of the historical stigma associated with "the projects," siting affordable housing in higher-income areas is undeniably met with great resistance over fears of neighborhood safety and quality. This stigma expands to private landlords' unwillingness to accept vouchers, lessening the neighborhood mobility a voucher is intended to provide. Indeed, Ellen (2016) finds that HCV holders do not generally live near higher performing schools than those receiving other forms of housing assistance, even though the program was intended to help recipients access higher quality schools. Insight from a randomized control trial of HCV recipients in Seattle-King County found that families receiving neighborhood mobility services, like application coaching and search assistance, were 3.5 times more likely to move into high-upward-mobility neighborhoods, compared to those just receiving a voucher (Bergman 2024). It appears that the barriers to utilizing vouchers are the primary explanation for neighborhood choice and weaker-than-expected outcomes for recipients; supportive mobility services clearly increase the positive results of tenant-based vouchers like HCV. This finding is echoed by Briggs (2008), who proposes attaching mobility counseling to school choice programs. Among assisted families, Ellen (2016) finds that those living in LIHTC developments live near the least disadvantaged schools.

Housing Affordability in Fulton County

There is a critical need for more affordable housing in Fulton County, particularly for extremely low-income households. The Department of Housing and Urban Development established the Home Investment Partnerships (HOME) Program to fund local government housing initiatives. They conduct semi-annual reports on the status of affordable housing for their participating jurisdictions, like the Fulton County HOME jurisdiction (excludes city of Atlanta). Out of 16,694 available rental units within the Fulton County HOME jurisdiction, fewer than 5% are affordable to households earning below 30% of the area median income (AMI). This leaves a shortage of approximately 5,235 units necessary to prevent housing instability and potential homelessness (HUD 2023). 74% of those extremely low-income households (≤30% AMI) are severely cost-burdened, and spend over half of their income on housing. In addition, 55% of low-income households (≤80% AMI) in Fulton County (excluding the city of Atlanta) are severely cost-burdened. This issue is especially pronounced in South Fulton, where families experience comparatively higher rates of housing cost burden and poverty than North Fulton. Federally subsidized housing in the county, administered primarily through programs like Housing Choice Vouchers, LIHTC developments, and limited public housing, attempts to address this gap, but continues to fall short of its need. As of 2023, the HAFC operates or assists 1,958 affordable housing units. The current proportion of programs, units and family type targeting are summarized below, sourced from the 2025-2029 Fulton County Consolidated Plan and the HUD 2023 HOME-ARP Evaluation Plan:

1. Public housing

Public housing is no longer the primary form of affordable housing in Fulton County, as it was in the 80s. Atlanta destroyed all of their traditional family public housing by 2011 due to

deteriorating conditions and management,[1] but East Point, College Park, and Roswell all maintain a few family and senior public housing properties. Fulton County currently has about 680 public housing units, with 620 of those targeted to families with incomes at or below 50% AMI. The waiting lists at these housing authorities and Fulton County Housing Authority (HAFC) are all closed, with wait times for units averaging 2.5 years. HAFC only manages one senior public housing apartment, but has partnerships with four LIHTC properties in South Fulton for 132 more senior units (HAFC 2023).

2. Voucher-based Rent Assistance

Fulton County offers both project-based and tenant-based voucher rent assistance. HUD estimates that there are 3,695 tenant-based HCVs in use in Fulton County, targeted toward senior and family renters with incomes at or below 50% AMI. While the exact demographics of HCV recipients aren't available, a 2017 estimate for Georgia states 78% of voucher holders are families with children, meaning there are around 2,882 families using HCV in Fulton County (CBPP 2017). In 2023, HAFC administered 960 HCVs to families. These vouchers are popular due to the flexibility it provides qualifying households in deciding where to live; all other forms of federal affordable housing are project-based. Similar to public housing, residents holding an HCV waited about 2.5 years before receiving it. The waitlist is currently closed and HAFC reports a high number of returned vouchers because of an insufficient pool of landlords willing to accept an HCV. HAFC also offers project-based Section 8 vouchers for six properties that have 533 units allocated to very low or extremely low-income households, with 162 of those units targeted to families. Voucher-based programs have had mixed effectiveness at moving mass households out of high-poverty neighborhoods; voucher recipients often remain near high-poverty areas, diminishing potential socioeconomic benefits (Ellen 2018). This is evidenced

[1] Atlanta now maintains two family public housing properties, with 92 units total.

in Fulton County where landlords in low-poverty neighborhoods, who aren't legally required to accept rent subsidies, are less likely to accept vouchers, as well as a lower quantity of rental units in these neighborhoods. HUD tracks HCV usage by tract, but it only captures tracts with over 10 voucher recipients, leading to imprecise measurements of its geographical usage.

3. Low-Income Housing Tax Credit (LIHTC)

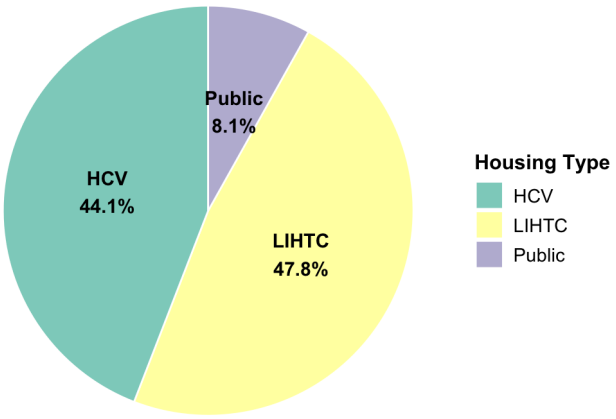
According to HUD's LIHTC database, there are about 28 LIHTC properties in Fulton County with about 4,000 units targeted to residents with incomes at or below 50% or 60% AMI. About 3,300 units were in family properties and 700 in senior properties. The majority of these are concentrated in the city of Atlanta and South Fulton. LIHTC properties are built by private developers that agree to allot a portion of their units as affordable housing for 15 to 30 years in return for a large tax credit. It is by far the largest source of new affordable rental housing, providing 3 million newly constructed or rehabilitated units since its inception less than 40 years ago (Freemark 2023). The most common development type is a 9% LIHTC application: they agree to set aside a minimum of 40% of their units at a rent affordable to those making 60% the AMI in return for a credit covering 70% of the construction cost. In Fulton County, the vast majority of LIHTC properties are entirely targeted towards 60% AMI and below. The LIHTC application process is competitive, especially for developers from Fulton County who've faced a less than 10% acceptance rate in some years. Making a property entirely affordable can make an application more enticing or open up alternate additional funding streams, like the HOME Program or tenant-based voucher funds.

A fear of the LIHTC program is that these units will not remain permanently affordable due to the 15-year compliance requirement and variation in the adoption of a 30-year affordability period; this lapse incentivizes developers that they may recoup some rent profit

after the compliance period ends. Many LIHTC projects constructed are now approaching the expiration of their compliance terms at 30 years, but current studies find the majority of non-programmatic LIHTC properties remain affordable at 60% AMI. This happens roughly 61% of the time, and others may partially or entirely convert to market rate (Guggenmos 2022).

Figure 1

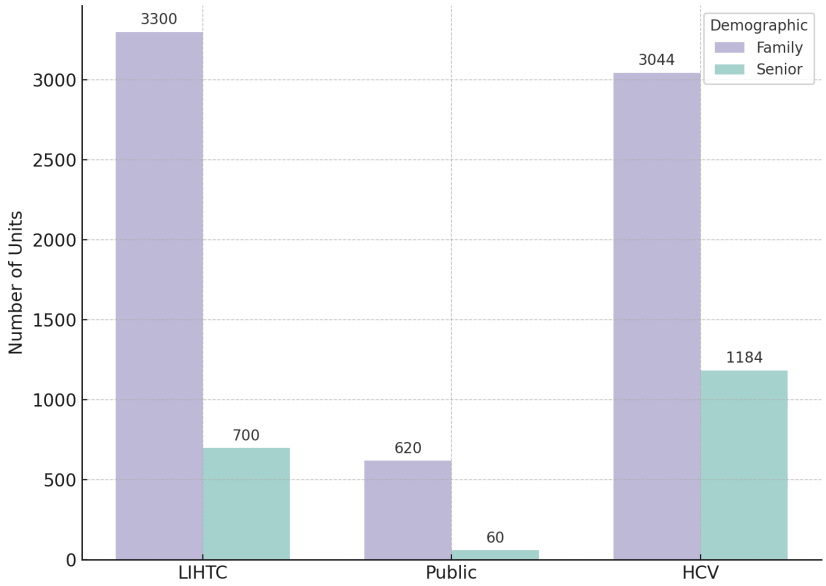
Total Subsidized Housing in Fulton County (without Atlanta) by Source (2023)



Note: From the U.S. Department of Housing and Urban Development. (2023). *Fulton County, GA HOME-ARP Allocation Plan*.

Figure 2

Subsidized Housing in Fulton County (without Atlanta) by Target Demographic (2023)



Note: This breaks down units by family and senior availability. From the U.S. Department of Housing and Urban Development. (2023). *Fulton County, GA HOME-ARP Allocation Plan*.

Outcomes from Affordable Housing

Constructing affordable housing can positively impact a neighborhood, despite public prejudices against it. Woo (2015) finds LIHTC projects tend to be developed in neighborhoods where crime was already prevalent, aligning with the association between high-poverty neighborhoods and higher crime rates. However, he finds that these new or rehabilitated LIHTC developments in fact mitigate neighborhood crime, potentially revitalizing distressed areas in line with the "broken windows" phenomenon. Over time, LIHTC properties are associated with a decrease in poverty rates in their high-poverty neighborhood and declining racial segregation (Lawrence 2018). Additionally, Goetz (1996) demonstrated that subsidized housing developments created by community development corporations in Minneapolis increased neighboring property values, reduced neighborhood crime, and enhanced neighborhood stability. For adolescents specifically, subsidized housing can significantly decrease engagement in risky behaviors: teens in subsidized housing show significantly lower rates of violence and hard drug use, and a lesser yet meaningful reduction in marijuana and alcohol use compared to matched peers without housing assistance (Leech, 2010). Schapiro (2021) found receiving any form of rental assistance significantly reduces housing instability, poor housing quality, and housing unaffordability for adults and their dependents. Fears about spillover effects on crime in surrounding neighborhoods are primarily unfounded and typically very small. This lack of correlation between affordable housing and crime holds for both project-based subsidized housing and for an increased presence of voucher holders in a neighborhood (Lens 2013, Ellen 2012).

Housing interventions often show the largest positive long-term effect on young children; they’re exposed to more years of their childhood in that new, hopefully safer, environment

(Chetty 2016). This increased impact is mirrored across child education and well-being initiatives, as youth may be the most susceptible population to social interventions due to an early stage of brain development (Gennetian 2012). However, there is less research on how moving into affordable housing impacts child well-being. Studies are mixed on finding an association between affordable housing and child socioemotional development. A limited number of rigorous quantitative studies on its effects demonstrate generally positive effects in regards to physical health like nutrition and asthma, and academic achievement (Meyers 2005, Allensworth 2007). A study of national LIHTC properties finds evidence that children in LIHTC developments are more likely to have a recent well-child and dental visit than similar children not in LIHTC developments (Gensheimer 2012). Contradictory to these, it also finds that chronic absenteeism resulting from illness or injury was higher among children in LIHTC housing (8.3%) than among those children not (4.9%). This utilizes a national sample of otherwise similar children as a comparison group, so these results should be interpreted cautiously for metrics with great geographic variance like absenteeism rates at local schools. Additionally, this measure of absence solely captures physical health barriers to attendance.

Housing Mechanisms for Improving Child Well-being

Housing instability directly and negatively impacts academic outcomes among children. Unaffordable housing contributes to housing instability, leading families into frequent moves or homelessness which significantly disrupt children's school experiences. Moves across schools have been shown to be damaging to children's academic performance, including difficulties getting restarted with the subject matter or new classmates (Hanushek et al. 2004, Mehana and Reynolds, 2004). This is particularly evident in elementary students whose reading and math performance can drop by an equivalent of 3-4 months of academic progress following a school

transition (Mehana and Reynolds 2004). Additionally, homelessness exacerbates chronic absenteeism, with 62.2% of homeless students in Fulton County being chronically absent (missing ≥10% of school days), compared to 25.5% among housed students (SchoolHouse Connection 2024). Poor attendance rates predict poorer grades in elementary school, as does persistent low-income (Morrissey 2014). Extremely low-income students facing high rates of absenteeism, like transient housing-insecure students, are dually battling barriers to their academic performance.

Fulton County Schools (FCS) defines economically disadvantaged students as those qualifying for free and reduced meals, which at the current income cap means reduced-price meals for families at 60% of the AMI and free meals at 40% AMI. Economically disadvantaged students, who constitute 53% of FCS enrollment and nearly 90% at South Fulton elementary schools near Low Income Housing Tax Credit (LIHTC) developments, face pronounced barriers in maintaining consistent school attendance (FCS 2025). Housing instability adversely affects children's mental and physical health through increased exposure to stress and illness transmission in crowded conditions (Leventhal 2010; Suglia et al. 2011). Crowded housing, common in households that have “doubled-up” to prevent homelessness, also translates into long-term negative effects on academic achievement; Lopoo (2016) finds childhood crowding leads to lower rates of high school graduation and total educational attainment. This effect is more pronounced for children, who have less of a life outside the home and need a quiet, secure place to do homework, learn skills, and socialize (Solari 2013).

Affordable housing improves child well-being and academic outcomes through both direct and indirect mechanisms. Directly, stable and affordable housing reduces school mobility and chronic absenteeism by providing consistency in living conditions and the routine necessary

for regular school attendance. For families that were homeless, this stability can give enough time for a family to identify a transportation plan with the district's homeless liaison. One study of a supportive housing intervention for chronically homeless families found an average increase of almost 25 days attended in the school year after move-in, with one student reaching 97% attendance and two siblings even reaching 99% attendance. It appears that stable housing can help move homeless students from extreme chronic absenteeism entirely into the "strong attendance" category (missing <5% school days) in the matter of a school year (Tapper 2010). Assisted households also report lower rates of food insecurity than households waiting to receive assistance, a critical factor in child well-being (Kirkpatrick 2011).

For example, the Atlanta-based nonprofit STAR-C program prioritizes renovating unsafe affordable housing properties, which allows students to stay in their same school zone rather than being forced out by private redevelopment. Notably, it also offers wrap-around services for building residents and children like after-school, free summer camps, and health clinics. An elementary school next to one of these projects that was on a federal watch list for failing schools was eventually designated a Title I Distinguished school, meaning that it was performing among the top 5% of Title I schools (those serving high proportions of low-income children) (Bagby 2022). This demonstrates a broader ability for stable, safe housing paired with supportive services to improve neighborhood and academic outcomes.

Indirectly, stable housing alleviates family stressors associated with economic hardship, such as parental depression and partner conflict which result in harsher parenting behaviors. Lower quality or minimal interactions between parent and child negatively influence children's emotional well-being and school engagement (Conger et al. 1995; Elder 1974; McLoyd et al. 1994). The unaffordability of safe, higher quality housing may result in parents working longer

hours, thereby being less available to their children. The reduced financial burden that subsidized housing offers may increase parental availability and enable families to redirect additional financial resources towards educational and developmental needs, positively affecting cognitive outcomes (Linver et al. 2002; Yeung et al. 2002). Affordable housing also reduces the likelihood of overcrowding and multiple moves—key predictors of poor child health and absenteeism (Bailey 2015).

Increased implementation of subsidized housing, primarily through LIHTC-supported developments, and accompanying supportive family services can significantly reduce the educational barriers faced by extremely low-income and homeless students like transportation and housing insecurity. Studies indicate rental assistance programs reduce evictions, forced moves, and associated instability, directly enhancing children's school attendance (Desmond 2018; Lundberg et al. 2019). These attendance benefits for homeless students even appear to be cumulative, increasing the individual's average attendance rate for each year spent in supportive housing (Tapper 2010). Given that Black residents in Fulton County tracts near LIHTC developments face a 4 times likelihood of being in poverty than their white neighbors, and that 75% of renters in these tracts are Black, increasing affordable rental housing specifically supports the reduction of the racial achievement gap prevalent in FCS. Black students are 10.9 times more likely to be suspended and are academically 3.3 grades behind their white peers, two outcomes that high absenteeism is a risk factor for (ProPublica 2016). Therefore, by increasing access to affordable housing through LIHTC developments, Fulton County can improve attendance, enhance child well-being, and foster academic achievement, particularly among predominantly Black and economically disadvantaged school populations.

Qualitative insights to this theory of change were obtained through interviews conducted with Fulton County School homeless liaisons, social workers, and the director of the Zion Hill Community Development Corporation, the primary nonprofit provider of rental and mortgage assistance in South Fulton. Zion Hill also offers rapid rehousing and motel assistance, with services targeted towards the homeless and most at-risk populations. These interviews provide contextual insights into how housing instability and homelessness manifest among Fulton County youth, contributing a qualitative confirmation of the expected mechanisms of change.

Qualitative Interviews

Qualitative data from those working with homeless students in FCS mirror national findings on homelessness and academic achievement; these students face high absenteeism rates from a myriad of challenges, and stable, affordable housing is the first and most significant step in addressing this. Abigail Winkles, a social worker at Tri-Cities High School, addresses how frequent school mobility accumulates academic gaps:

"For families who are chronically homeless, where their homelessness lasts years, the students are just compounding their curriculum gaps. If you miss multiplication facts in third grade because your family was moving, then in fifth grade, you're going to have trouble multiplying fractions because you don't know your times tables."

Preventing these academic interruptions is made more difficult by rental requirements—often demanding tenants earn three times the monthly rent and have no prior criminal record. Dawn Price, executive director of Zion Hill CDC, discusses these barriers, noting systemic challenges in housing voucher acceptance, even for Zion Hill as an organization in seeking a master lease:

“You just don't find apartment complexes that are in higher income areas willing to accept vouchers, because there's still a misconception that it's a certain kind of clientele coming along with this. It typically pigeonholes us into certain neighborhoods… tethering people to lower performing schools, under-resourced communities, and then the cycle just kind of continues.”

This cycle significantly impacts students, leading to heightened rates of school mobility and absenteeism. Zion Hill CDC is the largest nonprofit rent assistance provider in South Fulton, and will frequently be asked to fund motel stays.

“When you're talking about chronic absenteeism and transiency numbers, because these kids are moving from one motel to another, it’s very high… Every time they move to another motel, the parents need to get the bussing situation taken care of with the FCS homeless liaison. That usually takes about a week or so. When they're moving motels every couple of weeks, you have to consider this.”

This shows that for students relying on public school transportation, frequent moves mean frequent absences until new transportation is sorted out.

“At my school, we always try to help transport them to school… but sometimes the families are just too far away for that. I have a family right now who just landed in a shelter about 45 minutes away, and there's no way to get to them.” Says Winkle. “We're having to wait on… a magic school bus route that may or may not be set up. So the kids are sitting out of school for at least two weeks.”

However, stable housing clearly demonstrates transformative impacts. Price reports on the success of a particular program targeted towards homeless single-mother families, Kids Home, funded by United Way Atlanta in 2019:

“We were taking families that were in motels and putting them into apartments… But the issue is that you get a grant for a year, two years, and then the grant funding goes away. And then you have to break down the units, and you have to displace families again… So, what can you really measure in the life of a child if they've only been housed stably for a year or two?”

The urgency of stable, affordable housing is further emphasized by Winkle’s experiences at Tri-Cities High School with Frontline Housing:

“I've had probably six or seven families this year that they've housed that were in hotels or their car… Frontline is writing checks to property management for their deposits and first month's rent, which is super helpful… especially the ones in the hotel paying several hundred dollars a week who can’t save up for that deposit.”

Targeted assistance from the FCS Homeless Program, such as funding extracurricular activities, helps diminish social isolation and build critical social capital. This illuminates additional mechanisms for how housing insecurity impacts school participation. Vaneisa Hutchins, a social worker at Dunwoody Springs Elementary, shares how this can manifest in attendance for elementary schoolers:

“One of our kids was in chorus, and we paid for his full uniform; that makes kids feel like they are part of the community, and that your homelessness doesn't impact how you look amongst the other children. We have a partnership with Walmart where we buy clothing and shoes for any homeless family that needs that. I actually had a family that said they weren't coming because they didn't have clean clothes, right? They didn't have clean clothes. So allowing our families to go up to our high school to wash clothes and be given detergent is huge. Those things that sometimes we can take for granted, it really impacts our other families.”

“For one elementary student, it just kind of provided a social activity outside of staying in a hotel in one room with his family,” Says Cindy Fonder, South Fulton homeless liaison. “We paid his flag football fee, and that's getting him out of that hotel and just getting him around other students to have a little fun.”

Fonder highlights how any form of financial reprieve for families can be critical:

“We support families with aftercare for elementary specifically. Some of our families may work at Uber or Lyft… being able to have your student in an afterschool program till six o'clock affords you the opportunity to take on more rides, which means you can get more money. And even for us to be able to pay for it takes one thing off of your plate as well. So I think those things are really huge.”

Winkle highlights a success story, where the mere act of paying a sports fee for a family can change that child’s trajectory.

“I have two brothers that are both homeless, and they both play baseball. We were able to help pay their baseball dues… and because of the high school Athletic Association rules, just getting them on the team increased grades and attendance. They’re probably the two best players on the team. The coach has scouts coming in, and thinks that the 11th grader could probably play D1 baseball. So it's not even just helping them high school-wise; that's going to have a lasting effect.”

Ultimately, Price emphasizes the importance of housing-first strategies coupled with supportive programming, and the undeniable positive effects on children:

“I feel like our families are in a strainer… and affordable housing puts them in a bowl. Resources like counseling, food security, or afterschool activities stay because they're no longer leaking out. Housing provides that security and stability.”

She concludes, “When people are stably housed, these other things start to fall into place. Kids go to school more frequently, and parents get engaged and involved a little bit more, because there's not that level of chronic stress around “where are we sleeping tonight?” Absenteeism went down, involvement in afterschool programs picked up, parents reported to us that they were able to attend after-school functions or PTA meetings.”

These insights further emphasize the importance of low school mobility and supportive services, aided by stable affordable housing, on children’s academic achievement.

Research Design

These theoretical and practical mechanisms of change indicate that stable, affordable housing directly improves child well-being by reducing housing instability, thereby decreasing high rates of absenteeism and improving educational outcomes. While it’s clear that stable housing has wider indirect benefits, it’s difficult to capture comprehensive child well-being indicators and thus absenteeism is used as a proxy measure. Attendance is a comparative indicator because it directly reflects reductions in barriers associated with housing instability, such as frequent moves, transportation issues, and homelessness. Additionally, since higher rates of school attendance are associated with greater educational performance and attainment, this is a suitable measure of child achievement. Particularly, the outcome of interest in this study is school attendance among economically disadvantaged elementary students (≤60% AMI), who face higher rates of absenteeism and whose families qualify for subsidized family housing. The independent variable examined is the introduction of federally subsidized affordable housing developments within Fulton County School (FCS) elementary school zones. This housing, specifically through family Low-Income Housing Tax Credit (LIHTC) developments, serves as

the treatment variable on schools' attendance rates due to its intended effect of providing stable, affordable living conditions for low-income families.

Hypotheses:

1. Schools receiving a new federally subsidized affordable family housing development will experience a significant improvement in school attendance rates among economically disadvantaged students (≤60% AMI).
2. The positive impact on attendance rates will be more pronounced in the year immediately following the introduction of the housing development.
3. The impact of affordable housing on attendance will be positively significant for Black students, potentially to a lesser extent than economically disadvantaged students.

To test these hypotheses, this study examines Fulton County elementary schools as the primary units of analysis, categorizing schools as having received treatment if a federally subsidized family housing development was introduced within their attendance zone during the study period (2004–2019). Schools within FCS without any federally subsidized housing introductions during this period serve as control units. The attendance outcome is operationalized as the percentage of economically disadvantaged students exhibiting strong attendance, defined as missing 5% or fewer school days annually.

Data and Methods

This research employs a generalized synthetic control (GSC) method, which accommodates staggered treatment timing and units without individual comparability, like schools. The unit of analysis is the individual elementary school, and the analysis compares attendance patterns in treated schools before and after a housing intervention to a synthetically

constructed counterfactual derived from untreated elementary schools in the Fulton County school zone.

Treatment

The primary intervention assessed is the introduction of federally subsidized affordable housing developments targeted toward families within elementary school attendance zones in Fulton County. The treatment timing corresponds to the first complete school year entirely after the housing development is placed into service; a school receiving a development with an in-service year of 2006 would have 2008 (school data 2008 is for school year 2007-2008) as its first "treated" year, to capture changes in the 2007-2008 student population. Because of the nature of changing school zones and student bodies, the attendance effect is likely to be strongest in this first treated year when there's a guaranteed sudden influx of stably housed, low-income students.

Outcomes

The primary outcome measured is school attendance, specifically operationalized as the percentage of economically disadvantaged students maintaining strong attendance (missing 5% or fewer school days annually). Attendance serves as a proxy for overall child well-being and stability. After the 2018-2019 school year, this data becomes heavily disrupted from COVID-19 attendance effects and doesn't stabilize; since this model relies on predictions, the data used to construct it only extends until 2018-2019. This also indicates its appropriateness for shorter-term estimates, not long-term outcomes. A secondary outcome gathered was Criterion-Referenced Competency Test (CRCT) scores on 3rd grade reading and math proficiency levels, for school academic achievement.

Covariates

Covariates included in the analysis to reduce bias in the synthetic control estimation are:

- School-level demographic composition (percentages of Black, Hispanic, and white students)
- Enrollment percentage of economically disadvantaged students
- Socioeconomic indicators from the American Community Survey (ACS) for the census tract each elementary school is in, using the 2005-2009 5-year estimate values to match on pre-treatment community characteristics:
    - Poverty rate among youth under 18
    - Median household income
    - Median gross rent
    - Percentages of Black, Hispanic, and white residents

By including these covariates, it ensures the model is matched to control schools on other strong predictors of school attendance. This improves the quality of the match and predictions, as the synthetic control will approximate the treated unit based on those additional characteristics of the school and its neighboring area.

It is now possible to test the association between increased subsidized housing and child well-being by examining the outcomes of the local elementary school that a new development is zoned to. Constraints on local longitudinal data narrowed these outcomes of child well-being to absence rates, and how stable, affordable housing should increase attendance by decreasing barriers that families face. Over a decade of data on enrollment and attendance from Fulton County elementary schools and a database of federally subsidized properties in Fulton County (excluding the city of Atlanta) is used to answer the question: “How does the construction of affordable housing affect school attendance rates?”

Methodology: Data Collection

Data for this research was compiled to examine the effects of affordable housing developments on school absenteeism and subgroup enrollment in Fulton County Schools (FCS). An original dataset was created linking affordable housing developments, primarily those subsidized through the Low Income Housing Tax Credit (LIHTC) program in South Fulton County, to their zoned elementary schools. The data spans two decades, beginning in 2004 with the earliest available archives of Georgia LIHTC applications and Georgia Governor's Office of Student Achievement records.

The affordable housing dataset integrates multiple sources, including Georgia LIHTC 9% applications, HUD's LIHTC Property Database, and the National Housing Preservation Database. It is the best estimate of all federally subsidized affordable housing developments constructed in the past two decades in North and South Fulton, due to variability and incompleteness across sources. While this neglects non-federally subsidized developments like fully private or nonprofit funding, some of these separately funded properties were included as ones accepting project-based vouchers and any potential remaining properties represent a small portion of total affordable units compared to LIHTC. One purpose of excluding Atlanta Public Schools (APS) is because there appears to be increased variance in the sources of affordable housing within the city of Atlanta, leading to a larger number of uncaptured rent assistance or units from other organizations. The collected data includes development characteristics such as cost, targeted populations, type of project (rehabilitation or new construction), number of low-income units, and year placed into service (which often varies greatly from year awarded the grant).

Attendance and subgroup enrollment panel data from Fulton County elementary schools was compiled to identify patterns linked to the introduction of subsidized housing. Schools report this data annually to the Georgia Governor's Office of Student Achievement, which compiles a spreadsheet of all schools for each data subject (GOSA 2025). The years reported for these represent the end of that academic school year: 2005 is data from the school year 2004-2005, and so on. The constrictions on this data drive the resulting constrictions of this study; attendance and enrollment are the only available outcomes from 2004-2024 for elementary schoolers. The number of retained students, which can represent students held back from failure to master content, is available but drops almost to 0 for all FCS elementary schools by 2015– this most reflects shifts in education practice away from student retention, rather than a reduction of students with gaps in curriculum content from school mobility. Student mobility rates (% entering or exiting the school per year) would be an interesting variable as a proxy for housing insecure elementary students with higher school mobility rates, but this data isn't available until 2012 which is post-intervention for all but one family development identified.

Georgia data reports rates of absenteeism by subgroup populations, including the two populations of note for this study: Black and economically disadvantaged (≤60% AMI, per FCS definition) students. The attendance outcome of interest is the percentage of economically disadvantaged students exhibiting strong attendance. Chronic absenteeism, federally defined as those missing >10% days, wasn't selected due to reported data binning constraints (0-5%, 6-15%, over 15%). Enrollment data serves as covariates to match school compositions rather than as a variable of interest due to the existing diversity of affected Fulton County elementary schools; 4 of the 5 elementary schools receiving a new family development had, on average, 95% Black students at the time of construction.[2] Treatment accuracy was ensured by verifying all

[2] See Appendix Table A: School Characteristics

developments remained consistently zoned to their treated schools post-construction, using historical announcements of school closures and rezoning. Covariates were obtained from American Community Survey (ACS) 2005-2009 5-year estimates, capturing poverty levels, demographic data, and rent burdens within census tracts, crosswalked for accuracy in matching tract data to schools (U.S. Census Bureau 2021). Despite their longitudinal availability, attendance data in 2008 and enrollment by subgroup data in 2014 were missing for FCS. Data for these years was reused from the year before– since 3 of 5 qualifying schools gained family housing in 2007 or 2008, this reduces the quality of the pre-treatment match on school attendance and the resulting estimate, as it may indicate stagnant attendance trends when they were not.

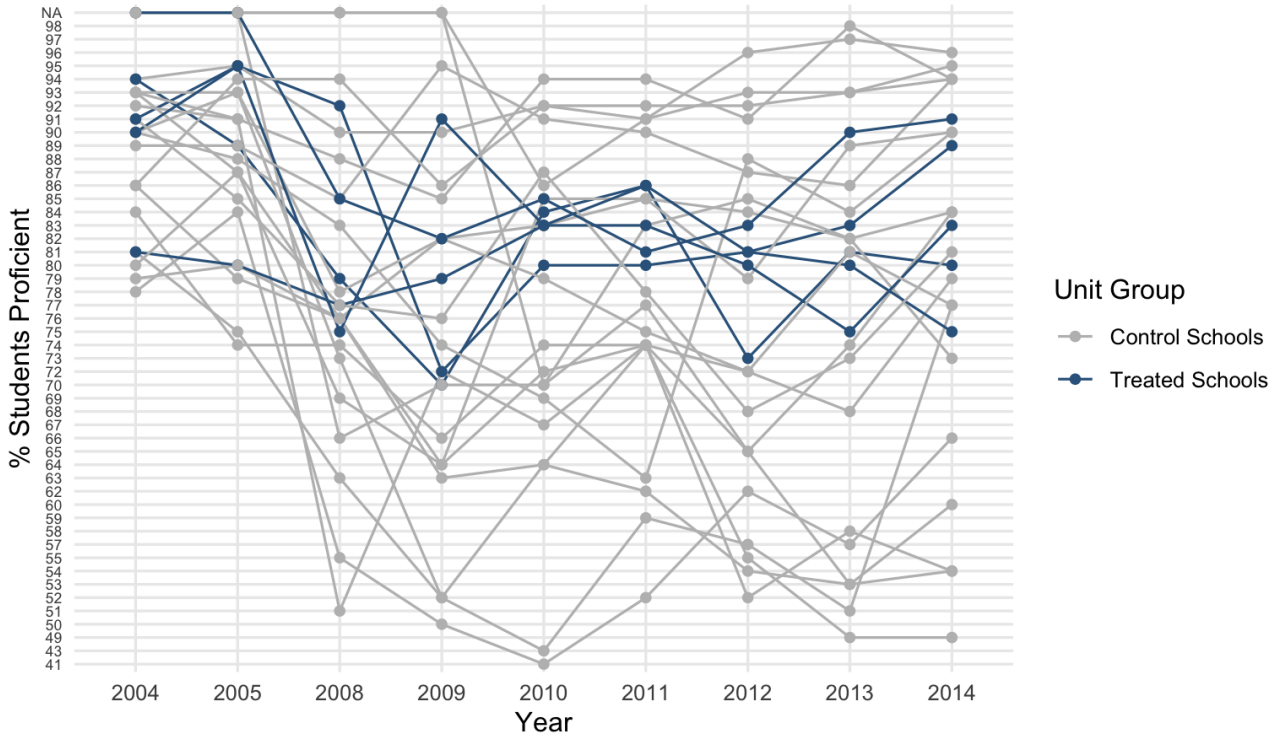
Atlanta Public Schools (APS) was excluded from the analysis primarily due to significant data reliability concerns following the documented cheating scandal on CRCT scores, raising doubts about the accuracy of reported educational metrics. Additionally, Atlanta has a more coordinated affordable housing effort due to its sole jurisdiction, but Fulton County Schools falls within several cities and housing authorities; this may have resulted in a more randomized placement of subsidized housing whose impact can be examined separately from the results of a more deliberate political effort.

Another outcome of interest was student achievement: Criterion-Referenced Competency Tests (CRCT) provided end-of-year reading and math proficiency scores for Georgia 3rd and 5th graders from 2004-2014. There were no meaningful patterns in this data once analyzed– as later discussed, achievement gaps often compound and stabilized housing is unlikely to immediately address this. Additionally, most treated schools did not have enough post-treatment observations for meaningful inference. This was discarded as an outcome of interest.[3]

[3] See Appendix Table 3: CRCT Scores

Figure 3

3rd Grader Reading Proficiency Percentiles, CRCT scores (FCS)

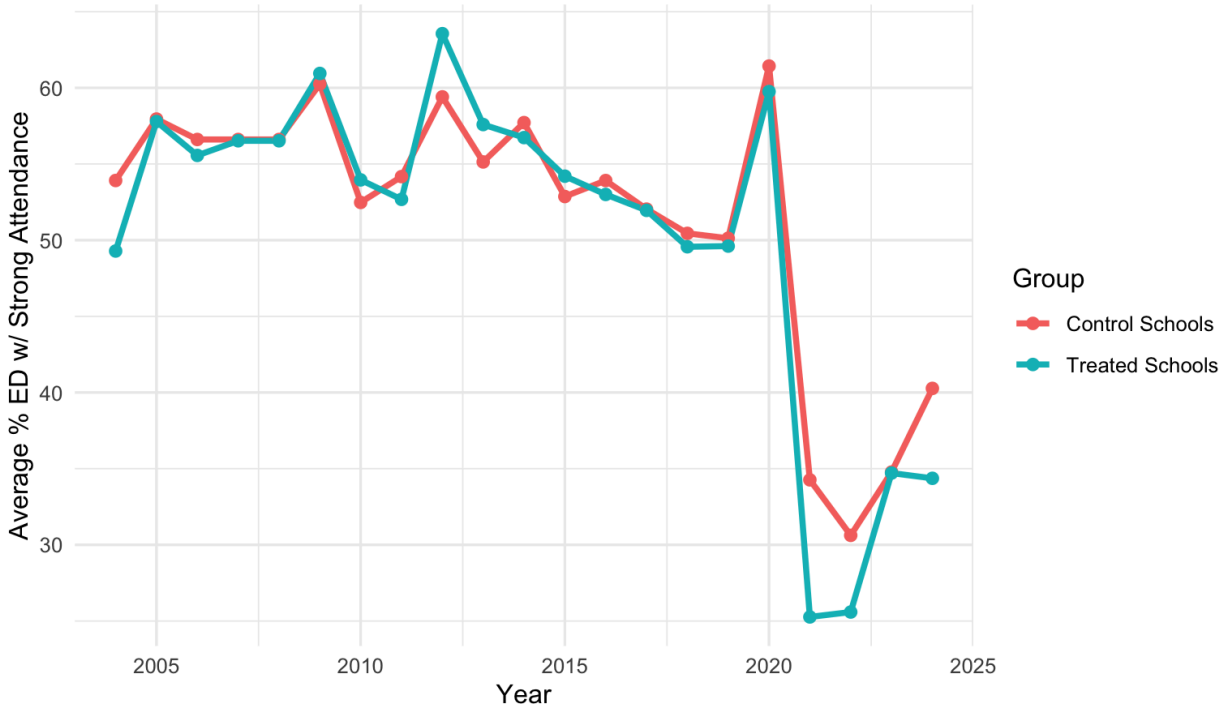


Note: From GOSA. (2024). *Criterion-Referenced Competency Tests (CRCT) (Retired).*

While school and housing data was available until 2024, this study ends in the 2018-2019 school year. COVID-19 greatly disrupted that metric and continues to eliminate comparability as the measure recovers. This year constraint only excludes 1 family development, and it was the double-treatment of Gullatt Elementary with another family development in 2021; the model doesn't capture double-treatments anyways. However, this deeply limits the longitudinality of the trends one can observe.

Figure 4

Disruption of Attendance Data through COVID-19



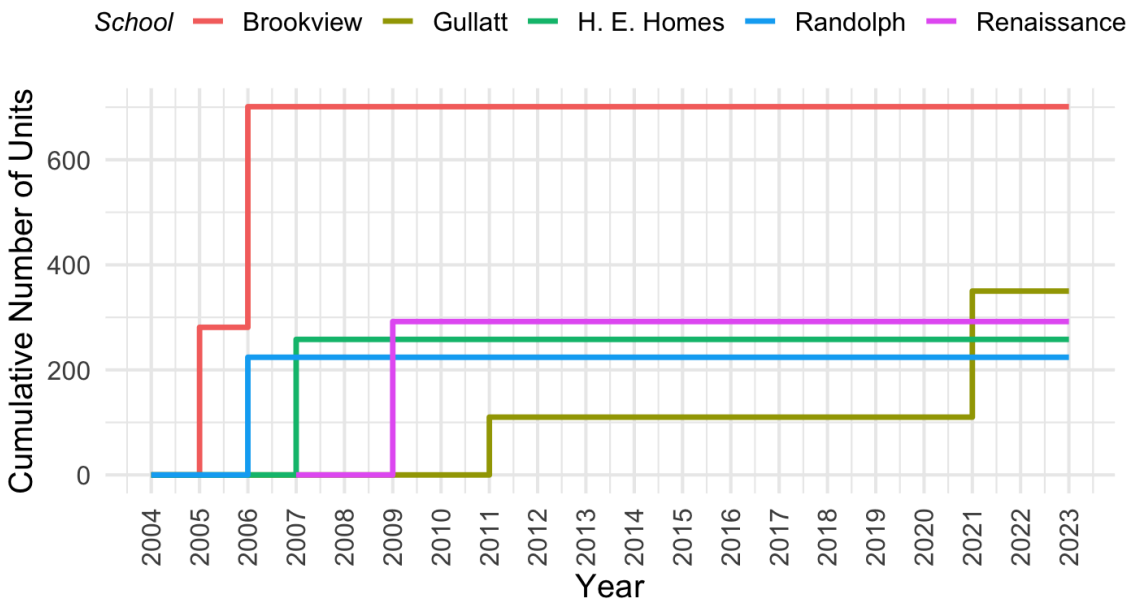
Note: From GOSA. (2024). *Downloadable Data- Attendance.*

FCS Elementary Schools Receiving Family Developments

Ultimately, 14 elementary schools received government subsidized developments in their zone from 2002-2024: 20 new constructions, and 14 rehabilitations from LIHTC 9% awards. A minimum of two pre-treatment periods was needed for the model, so a final count of nine schools were considered treated (earliest in-service year 2006). Five of those elementary schools received a family development, with one being "double-treated" and receiving a second family development 10 years later. Developments designated exclusively for older persons (HFOP) were excluded based on qualitative insights from Zion Hill CDC into the absence of an associated increase in family affordability. These five schools are the "treated" units of analysis.

Figure 5

Cumulative Affordable Family Units by FCS Elementary School



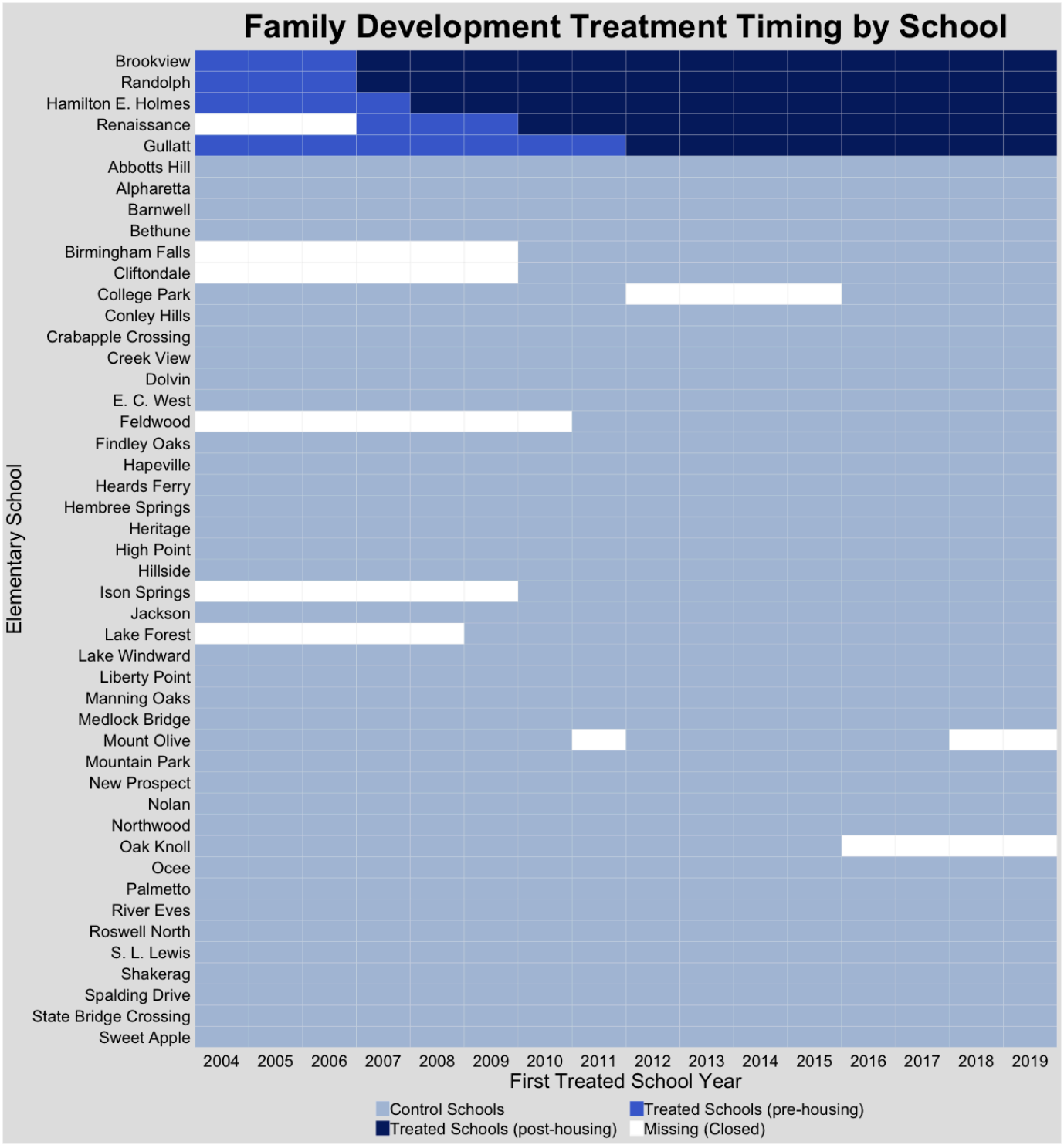
Note: This graph depicts the "in-service" year and quantity of affordable units a school received; the school's "treated" year is the subsequent school year. All initial family developments are 100-300 units. From the Georgia Department of Community Affairs. *LIHTC Applications for funding and funding cycle selections (2004-2024).*

The generalized synthetic control (GSC) method requires a large "donor pool" of untreated units. It uses observations from the pre-treatment periods–hence the need for a minimum of two pre-treatment observations–to create a weighted composition of control schools that imitates most closely how a treated school behaved pre-treatment. That weighted composition of the donor pool creates the treated unit's synthetic counterfactual that is predicted after the treatment point. Here, that donor pool is schools that had no federally subsidized affordable housing– family or senior-targeted–constructed in their school zone. The 9 schools that received senior-targeted housing from 2004-2019 were excluded from the donor pool; even though it appears constructing senior-targeted housing has no improvement on a family's ability to find an affordable apartment, there's a chance that children living or "doubled-up" with older

caretakers may benefit from its construction. Excluding those schools from the donor pool ensures that the ones in it are “untreated” in terms of federal affordable housing. The remaining 46 FCS elementary schools serve as the donor pool for the 5 treated schools. This study includes data from schools that closed during this period. If a school was open for two years pre-treatment, it was utilized in the donor pool for matching; school closures afterward only applied to one control school. The distribution of treated to untreated schools and their treatment histories are below. Note the large donor pool (46) compared to treated schools; this strengthens the GCS by ensuring variability in observations and characteristics available for the model to match on. Below is a panel view of when schools received affordable housing and a table of selected characteristics of schools and their comparisons.

Figure 6

Reception of Family Affordable Housing by School



Note: This shows the year utilized as the "treated" year–this is the subsequent complete school year after the development was placed in service. This only depicts the schools with family developments, and excludes schools that were senior housing recipients.

Table 1

2007 Characteristics of Treated and Donor Schools (Pre-intervention for all)

School	Enroll % ED	% ED Strong Attendance	Enroll % white	Enroll % Black	Enroll % Hispanic	Tract % Black	Tract % white	Tract % Hispanic	% child poverty	Average Rent	Home Value	Household Income
Brookview	87	51.6	0	95	1	0.96	0.04	0.01	0.48	776	102300	26944
Gullatt	87	60.6	0	95	2	0.91	0.05	0.01	0.55	836	79600	28529
H. E. Holmes	87	54.1	1	95	2	0.80	0.16	0.10	0.31	1093	97800	41402
Randolph	41	60.1	0	99	0	0.92	0.05	0.03	0.04	1157	197700	83798
Renaissance	43	59.6	3	91	1	0.91	0.06	0.01	0.13	841	166800	60972
E. C. West	61	55	12	65	18	0.40	0.56	0.11	0.16	925	143000	51907
Mount Olive	77	61.1	0	93	4	0.77	0.09	0.18	0.35	896	113600	45283
Oak Knoll	85	59.9	1	68	30	0.80	0.16	0.10	0.31	1093	97800	41402
Conley Hills	89	67	2	72	24	0.63	0.26	0.27	0.54	883	101000	34957
College Park	93	61.6	0	83	14	0.63	0.33	0.09	0.75	637	195100	33139
Lake Windward	3	48	65	9	4	0.05	0.71	0.07	0.02	1193	322300	96875
Mountain Park	3	70.8	89	6	1	0.13	0.81	0.04	0.01	1775	587500	160431
Spalding Drive	61	61.9	21	35	33	0.35	0.63	0.17	0.19	1098	263600	50264
All Controls	40	56	39	36	13	0.32	0.55	0.09	0.16	1183	264718	79993

Note: The first 5 schools are the treated schools with a family development, the subsequent 3 are their nearest neighbors, and the last 5 are the top 5 weighted control units in the model (most utilized in creating the counterfactual)[4]. 'All Controls' averages the 46 control schools. From US. Census Bureau. (2021). *American Community Survey 2005-2009.;* GOSA. (2024). *Downloadable School Data.*

[4] The table of implied weights of all schools is Appendix Table 4, and discussed in the analysis.

Table 2

2013 Characteristics of Treated and Donor Schools (Post-intervention for all)

School	Enroll % ED	% ED Strong Attendance	Enroll % white	Enroll % Black	Enroll % Hispanic	Tract % Black	Tract % white	Tract % Hispanic	% child poverty	Average Rent	Home Value	Household Income
Brookview	96	54.8	0	97	2	0.94	0.02	0.02	0.35	955	88700	32938
Gullatt	94	68.2	1	87	10	0.92	0.04	0.03	0.22	942	110500	37674
H. E. Holmes	98	50.3	2	78	19	0.74	0.15	0.11	0.23	1352	111400	53134
Randolph	73	58.9	0	98	1	0.94	0.05	0.01	0.07	1355	233100	78743
Renaissance	74	58.3	2	93	4	0.89	0.09	0.02	0.06	1382	172100	71382
E. C. West	76	57.2	2	82	13	0.53	0.41	0.09	0.29	1015	131500	52447
Mount Olive	95	47.2	0	87	10	0.84	0.09	0.09	0.28	1085	122500	41674
Oak Knoll	93	53.4	1	61	37	0.74	0.15	0.11	0.23	1352	111400	53134
Conley Hills	97	55.1	3	63	31	0.51	0.42	0.15	0.30	979	100800	42079
Lake Forest	98	63.6	1	5	92	0.03	0.92	0.04	0.02	1527	418600	101341
Oakley	84	61.3	1	90	7	0.85	0.12	0.08	0.26	981	135900	41600
Birmingham Falls	2	55.9	85	4	3	0.03	0.94	0.03	0.01	2975	650500	209484
Cliftondale	65	55.9	0	98	1	0.89	0.09	0.02	0.06	1382	172100	71382
Isom Springs	81	66.6	10	46	37	0.44	0.48	0.09	0.04	1125	119700	60576
Lake Windward	8	50.6	55	8	9	0.10	0.65	0.09	0.04	1654	381400	130293
Spalding Drive	36	64.9	47	23	20	0.25	0.65	0.18	0.10	1371	187300	76567
Controls	47	53	32	38	17	0.34	0.53	0.08	0.13	1504	307578	93447

Note: The first 5 schools are the treated family schools, the subsequent 3 are their nearest neighbors, and the last 8 are the top 8 weighted control units in the model (most utilized in creating the counterfactual). More control school characteristics are available here due to school openings; the two schools with later family housing interventions use these schools. This utilizes the ACS 2010-2014 5-year estimates for its demographic covariates. From US. Census Bureau. (2021). *American Community Survey 2010-2014.;* GOSA. (2024). *Downloadable School Data.*

Examining these same characteristics six years later in 2013 can provide a snapshot into any dramatic shifts or overall trends in these school zones. Importantly, these measures are not at an even amount of years post-reception of family housing; for some, this is five years later and attendance trends are less likely to be impacted by the treatment. The average change for the treated schools in this time period is +1.2% percent, compared to a 7% change for control schools. However, calculating the change in attendance data of the year prior to and 1 year post-treatment can provide a simple estimate of a reasonable effect size:

Table 3

Treated Schools (Post-intervention for all)

Treated School	Pre-treatment (Y_0)	1 year post (Y_1)	Change (%)
Brookview	51.6	59.8	7.2
Gullatt	53.2	70.5	17.3
H. E. Holmes	54.1	62.1	8.0
Randolph	55.5	60.1	4.6
Renaissance	64.4	58.5	-5.9

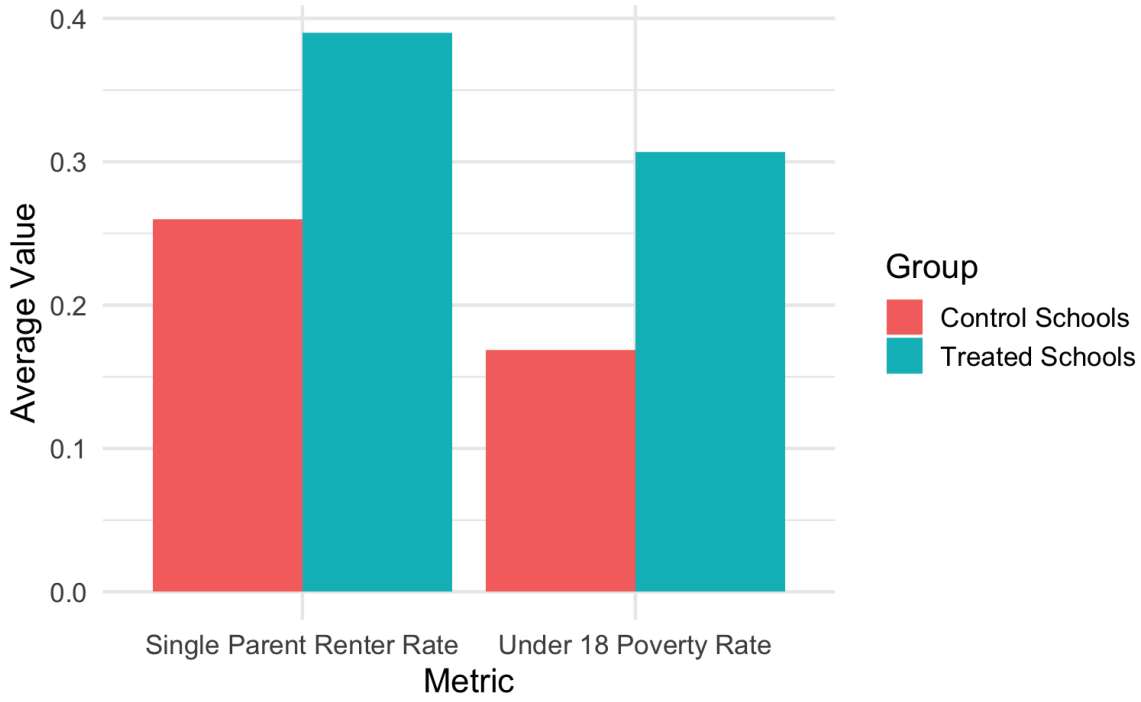
There was, on average, a 6.24% increase in the percent of economically disadvantaged students exhibiting strong attendance in the subsequent complete school year after receiving housing. Thus, an estimated effect size around this range that's attributed to the housing intervention would be a reasonable result.

Federally Subsidized Developments in Fulton County Schools

Newly constructed subsidized housing developments in Fulton County Schools (FCS) are reflective of national trends regarding placement and population served. Comparing "treated" census tracts that received a housing development to tracts with no new construction depicts this variation in demographics. Within treated tracts, half of all renter households are families, and single-mother households make up approximately 40% of those family renter households, over 10% higher than the non-select tracts in Fulton County Schools. The highest educational attainment among renters in these treated tracts is a high school degree for about 50% of residents. At the time of housing development construction, the poverty rates for children under 18 in these census tracts ranged between 20% and 40%, significantly higher than Fulton County's average poverty rate of approximately 20%. Students are also more likely to be Black or economically disadvantaged at treated schools.

Figure 6

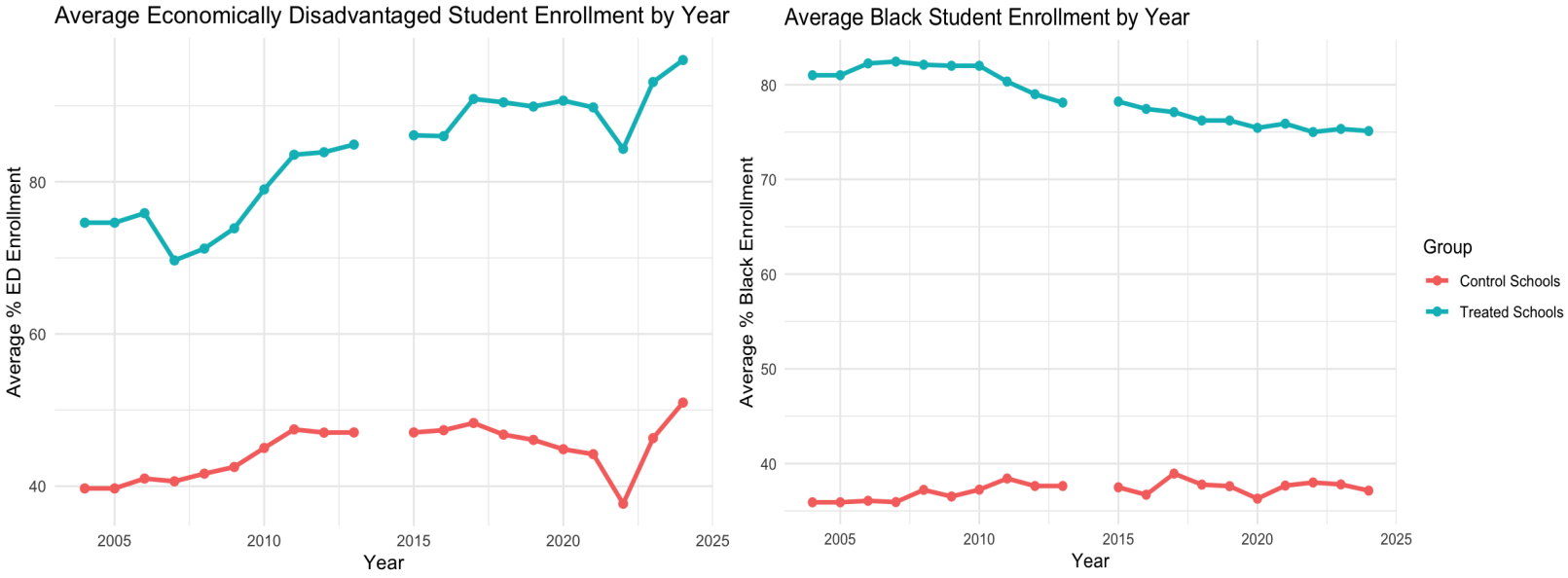
Covariate Disparities in Treated vs. Untreated Schools



Note: This shows the higher rates of single parenthood and child poverty in the treated schools' census tracts. From US. Census Bureau. (2021). *American Community Survey 2005-2009.*

Figures 7 and 8

Enrollment Gaps in Treated vs. Untreated Schools



Note: From GOSA. (2024). *Total Enrollment by Subgroup Characteristics.*

Homelessness among students remains a pressing concern in these areas, where the average proportion of income spent on rent ranges from 40-50%. Data from the Department of Education revealed that in the 2019-2020 school year, 1,312 Fulton County students lacked stable housing, with 91% of those students identifying as Black. Among over 1,700 students identified as homeless in FCS in 2022, nearly half (47%) were elementary school students, emphasizing the critical need for stable housing solutions targeted toward families with young children. (NCES 2019). Students at elementary schools near affordable housing developments have a homelessness rate 1.5 times greater than the district average (2.58% versus 1.67%), meaning those schools also face marginally higher chronic absenteeism rates. This most likely indicates that affordable housing developments are placed in areas demonstrating heightened housing needs. Examining the placement reveals clusters of developments, with the vast majority being constructed in South Fulton. Of note is that there is only one recent family housing development in North Fulton, and it did not satisfy the 2 pre-treatment observations requirement; effectively, this is a study of South Fulton family housing and schools. This is on trend with general affordable housing placement patterns, as South Fulton families experience comparatively higher rates of housing cost burden and poverty than North Fulton.

Figure 9

Map of Affordable Housing Developments and Schools in South Fulton

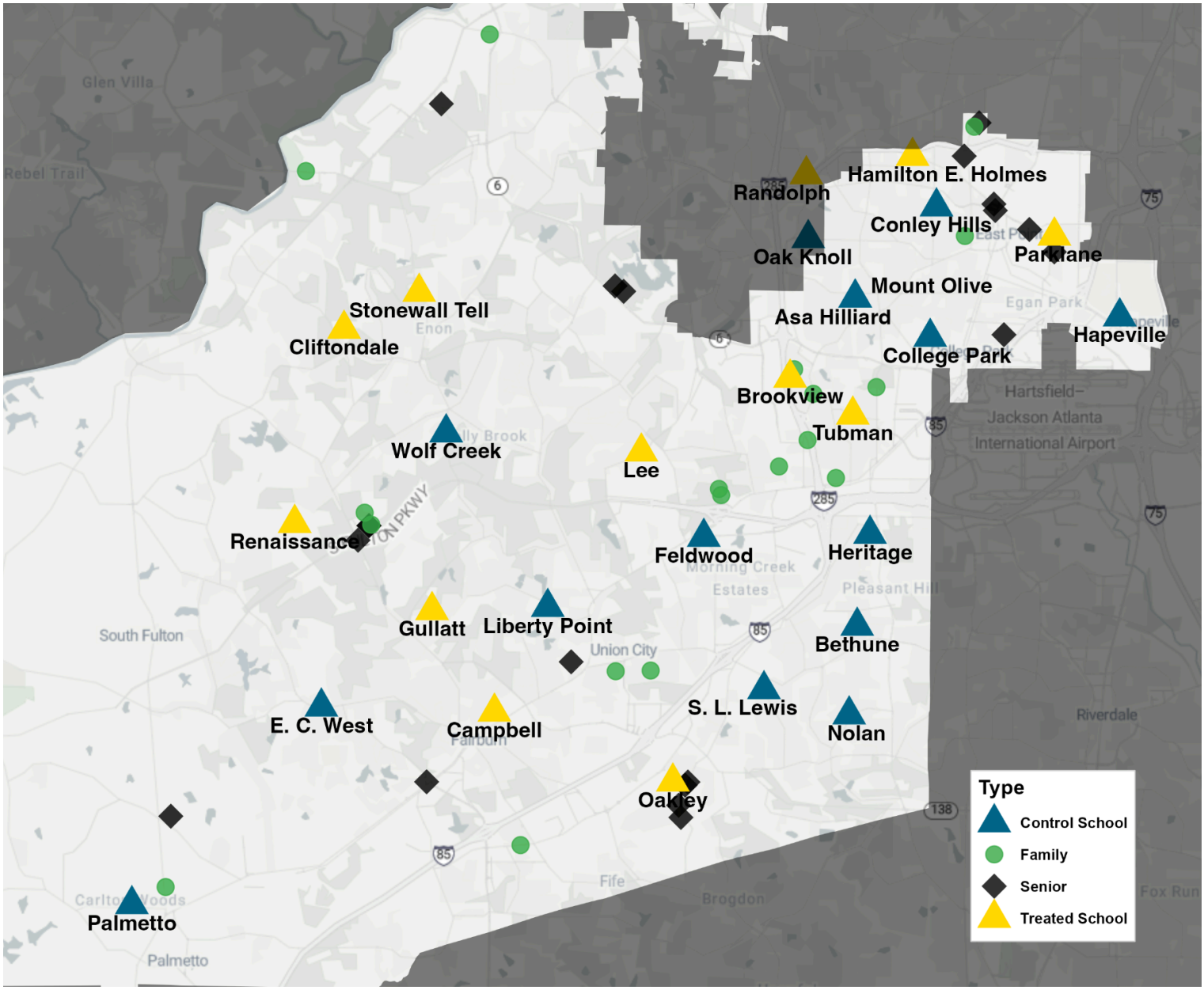
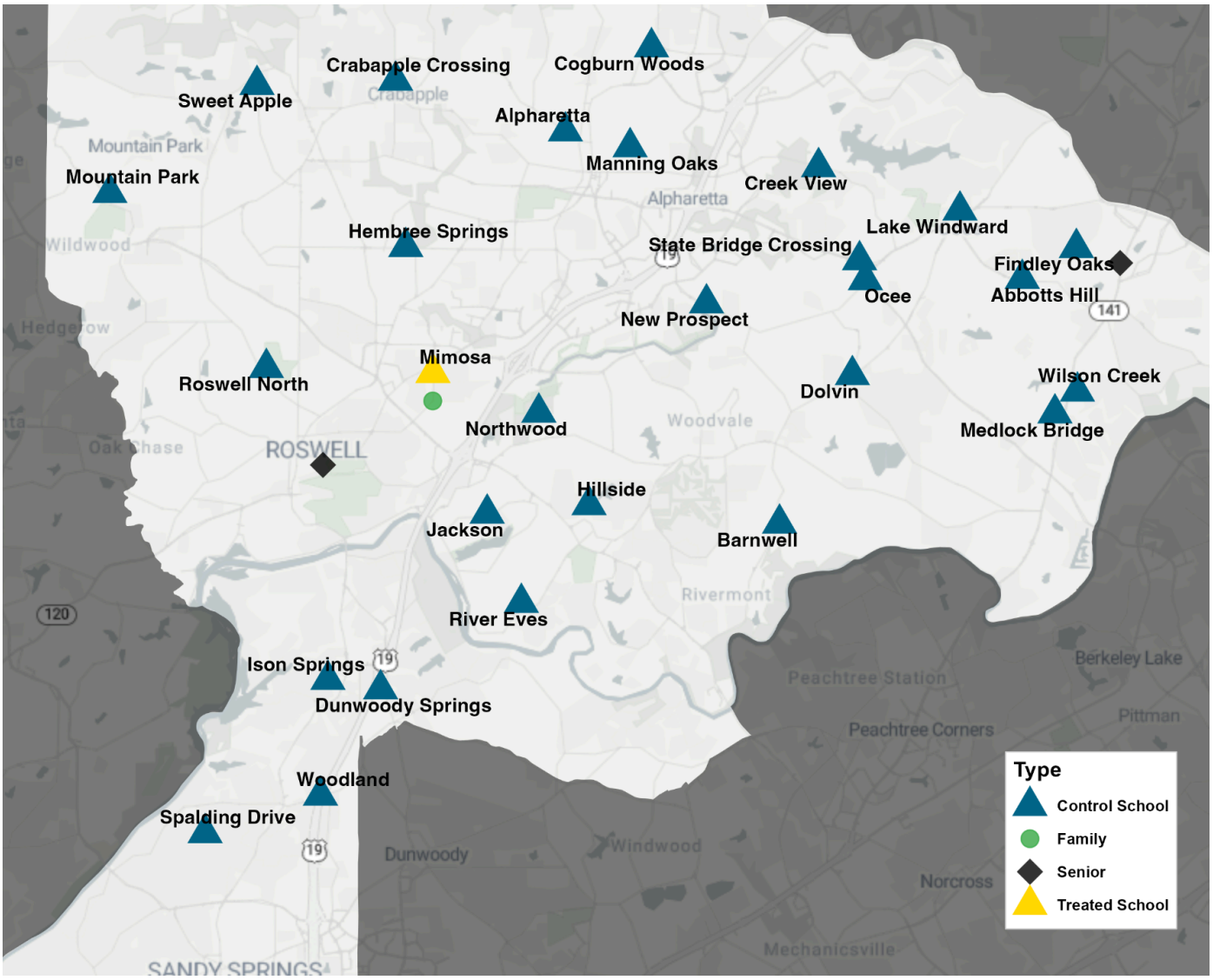


Figure 10

Map of Affordable Housing Developments and Schools in North Fulton



Methodology: Analysis

Generalized Synthetic Control

This study utilizes a generalized synthetic control (GSC) method to estimate the effect of affordable family housing developments on elementary school attendance within Fulton County Schools (FCS). The primary dependent variable analyzed is the percentage of economically disadvantaged students with strong attendance, or missing 5% or fewer school days annually. This measure was chosen over traditional chronic absenteeism (>10%) due to data binning constraints and noise introduced by transient students. This provides a clearer measurement of attendance patterns among economically disadvantaged students following housing interventions and does not preclude capturing the effects on transient students with severe absenteeism. As seen from Tapper (2010), stable housing can transform a homeless student's attendance rates completely; measuring strong attendance rather than extreme absenteeism captures improved attendance by students from varying beginning levels of absenteeism.

The analysis includes five treated elementary schools matched with a donor pool consisting of 46 untreated elementary schools within Fulton County. The relatively larger donor pool, including 34 schools operational throughout the entire study period (2004-2019), enhances the precision of pre-treatment matching by increasing variability in school characteristics of the donor pool. As seen earlier in Table 2, there is a wide range of outcome and covariate values in the donor pool.[5]

To evaluate the treatment effect from this panel data of elementary school attendance rates, a generalized synthetic control was chosen over traditional Difference-in-Differences

[5] Full table of school characteristics in Appendix

(DiD) methods due to violations of DiD's parallel trends assumption. By using schools as the unit of analysis, jurisdiction-specific factors such as local school board decisions and zoning changes eliminate direct comparability of school units. The differences in school characteristics seen in Table 2 also violate this; while some schools may have similar attendance percentage outcomes, it may be from a student body that's 96% economically disadvantaged vs. 3%, or with a drastically different racial composition. A correctly balanced control unit for a school is unattainable from a single school. In contrast, GSC accommodates unit-specific heterogeneity by constructing a synthetic counterfactual through weighted combinations of untreated schools that closely match the pre-treatment trajectories of schools receiving affordable family housing.

Specifically, the GSC model implemented follows the methodological framework proposed by Xu (2017). His method assumes that treated and untreated units share underlying latent factors influencing their outcomes; here, that assumption expands to Fulton County elementary schools. The model first identifies common latent factors using only untreated units, then uses pre-treatment data to estimate factor loadings for treated units. Counterfactual outcomes for treated units post-treatment are then created using these estimated loadings and factors. The resulting Average Treatment Effect on the Treated (ATT) at each post-treatment period is calculated as:

$$ATT_t = \frac{1}{Ntr} \sum_{i \in T} [Y_{it}(1) - Y_{it}(0)] \; for \; t > T_0$$

Where $Y_{it}(1)$ is the observed outcome for the treated unit, and $Y_{it}(0)$ is the synthetically estimated counterfactual.

The intervention, or treatment, is defined as the introduction of a family-targeted affordable housing development within a school's attendance zone with the treatment period (Y_1)

identified as the subsequent complete school year following the housing development's in-service year. Because schools report data for school years, it appears as two years later than the in-service year. This two-year lag ensures that schools report data after having implemented the intervention and enrolled students for a full school year. However, some effects may begin to appear before the official 'treatment' year, weakening its Y_0 estimate.

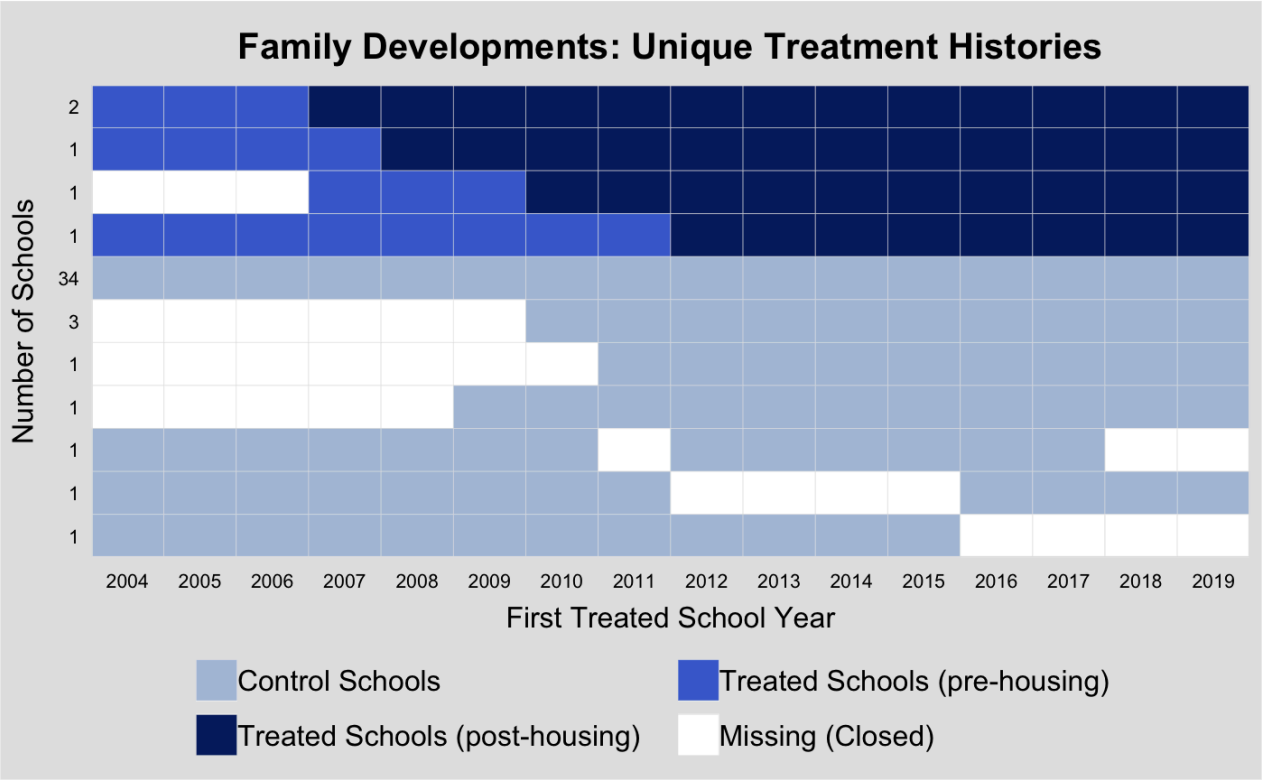
The model includes covariates from school enrollment subgroups (percentages of Black, Hispanic, white, and economically disadvantaged students) and ACS census tract data (poverty rate among youth under 18, median household income, median gross rent, and racial composition). Estimates from the 2005-2009 ACS 5-year survey were used for matching, since that is entirely within the pre-treatment period for 4 out of 5 schools. The census tract each school is located in is the geography used for the ACS estimate. Including these covariates improved the accuracy of pre-treatment matching through reducing pre-treatment Root Mean Square Error (RMSE) and pre-treatment outcome imbalance.[6] A lower RMSPE indicates a stronger match and improved predictive accuracy, and is recommended as an assessment of significance by Abadie (2010). Matching on these covariates ensures the model considers other predictive factors as well as gives greater precision in ATT estimation, supported by findings from Pickett (2022) that a lower pretreatment imbalance generally leads to a reduced average absolute bias.

[6] 3.033 RMSPE (family model with no covariates) vs. 2.953 (family model with covariates)

A panel view of the data demonstrates staggered treatment adoption across schools and the 34 schools open from 2004-2019, justifying the generalized synthetic control's suitability. Unlike the standard synthetic control method, GSC effectively manages staggered treatments by estimating factor loadings and counterfactuals collectively rather than individually, and handling unbalanced panels of data by adjusting years to a time pre- and post-treatment.

Figure 11

Unique Treatment Histories of Schools with Family Developments



Note: This graph depicts the quantity of schools following the same housing intervention timeline- two schools were treated in 2007, so there are 4 unique treatment histories.

Despite only having three pre-treatment periods observable for matching in three of the treated schools, the synthetic control approach remains preferable. Unlike traditional matching methods that require extensive pre-intervention data, synthetic control effectively utilizes fewer pre-treatment observations through its varied weighting of the control units. However, the small

number of pre-treatment periods present can still lead to biased estimates of the treatment effects from “incidental parameters.”

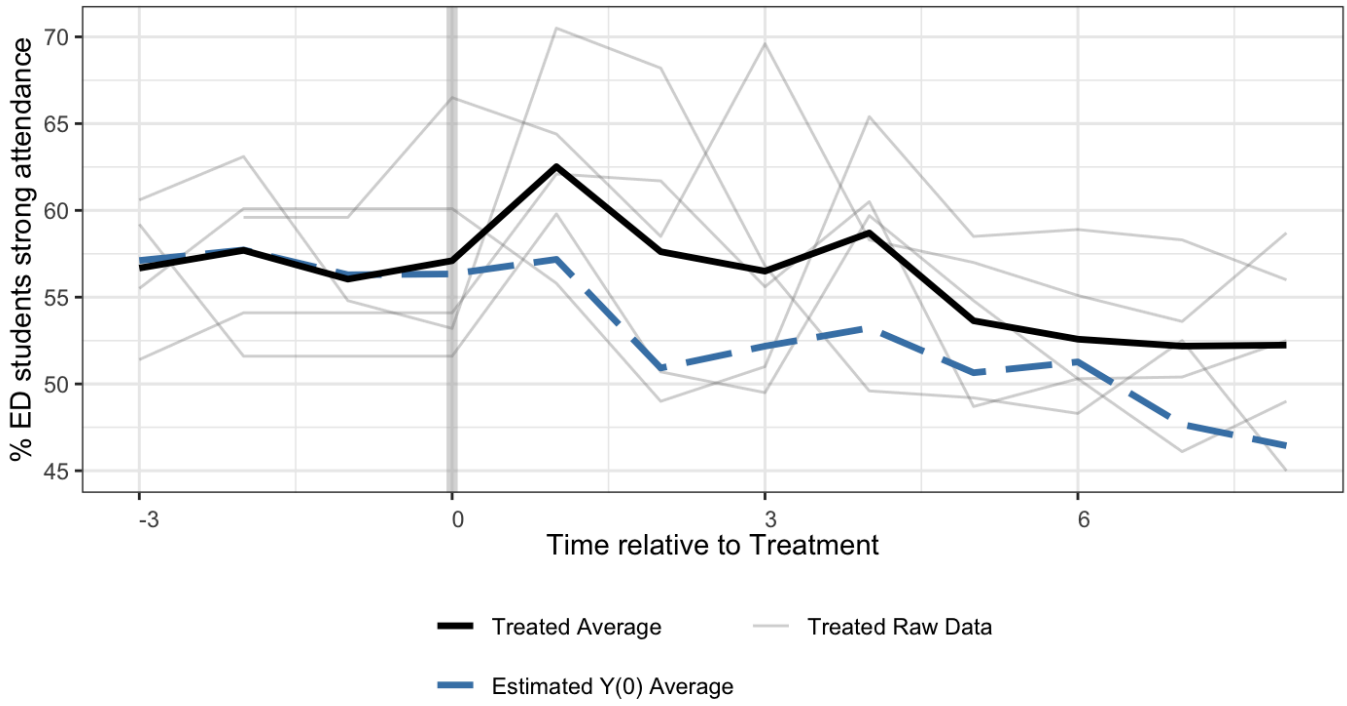
To account for this possibility, a placebo model was created using the nearest neighboring untreated school with a pre-treatment period of 2 years; this nearest neighbor will be most likely to reflect similar fixed effects due to geographic variation. Additionally, a placebo counterfactual was constructed for each control school. Doing this can quantify the treatment effect in relation to the donor pool’s own placebo outcomes–a persisting gap indicates that the treated results are more significant compared to trends in untreated schools.

A limitation of this model is the inability to account for double treatments, where a school receives multiple housing developments at different times. 7 out of 9 treated (family and HFOP) schools were double-treated within a decade. The synthetic control model inherently considers treatment as binary and lacks the capacity to quantify cumulative effects from subsequent developments or varying sizes of developments. However, only one school received two family housing developments, and the second development was excluded as it was constructed during 2021 when attendance data isn’t meaningful. Thus, double treatment doesn’t present within this study, although the varying magnitude of developments isn’t captured. In this case, each newly constructed family development is 110-280 units, so they are relatively similar intensities of treatment.

Results

Figure 12

Average Treatment Effect on the Treated from Family Affordable Housing



Note: This uses a "time relative to treatment" scale, where each unit's years are adjusted to pre- and post-treatment.

The model finds an overall Average Treatment Effect on the Treated (ATT) estimate of 7.739, meaning that after affordable family housing developments were introduced into school attendance zones, there was, on average, a 7.739% increase in the proportion of economically disadvantaged students with strong attendance (missing 5% or fewer school days). This outcome appears to be relatively immediate, with these effects being most pronounced in the following two years after a school receives new family subsidized housing. There is a clearly significant effect in the second year, indicating a 9.48% increase in the proportion of economically disadvantaged students with strong attendance. There is a wide band of standard error in this estimate, due to the low number of treated units and data variability.

Figure 11

Estimated ATT of Family Affordable Housing with Error Bar

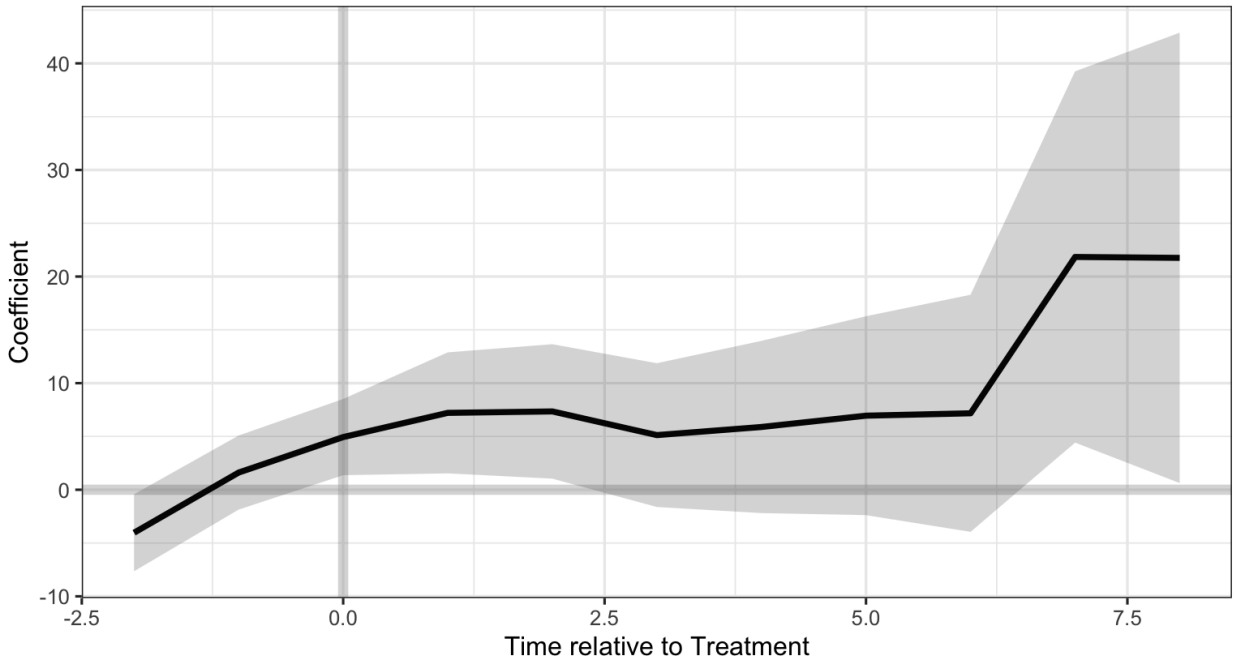


Table 4

Family Model: ATT Estimates on % Strong Attendance for Economically Disadvantaged Students

Time Period	Estimated ATT	SE	p-value
Average ATT	7.739	2.207	0.00045
-2	-3.393	1.735	0.05047
-1	1.410	1.631	0.38728
0	1.823	1.747	0.29678
1	8.614	2.786	0.00199
2	9.483	2.937	0.00125
3	4.861	3.038	0.10965
4	4.893	3.402	0.15039

Note: Full outcome table with CIs in the Appendix.

Table 5

Family Model: Estimated Weights of Controls: Top 5 for Each Treated School

Control School	Brookview	Renaissance	Gullatt	H.E. Holmes	Randolph
Lake Forest	0.2837	0.5839	-0.0385	-0.5266	-1.9619
Birmingham Falls	0.2098	0.4317	-0.0285	-0.3894	-1.4506
Lake Windward	0.1507	0.3102	-0.0205	-0.2798	-1.0424
Ison Springs	0.0617	0.1269	-0.0084	-0.1145	-0.4265
Wolf Creek	0.0549	0.1129	-0.0074	-0.1019	-0.3795
Cliftondale	-0.1803	-0.3711	0.0245	0.3347	1.2470
Mountain Park	-0.0822	-0.1693	0.0112	0.1526	0.5687
Conley Hills	-0.0470	-0.0968	0.0064	0.0873	0.3252
College Park	-0.0431	-0.0887	0.0058	0.0800	0.2980
Spalding Drive	-0.0405	-0.0833	0.0055	0.0751	0.2799

Note: The 5 control schools most used for Brookview were used in the same order for Renaissance. Gullatt, H.E. Holmes, and Randolph had the same top 5 control schools and order. The complete control panel is in the Appendix.

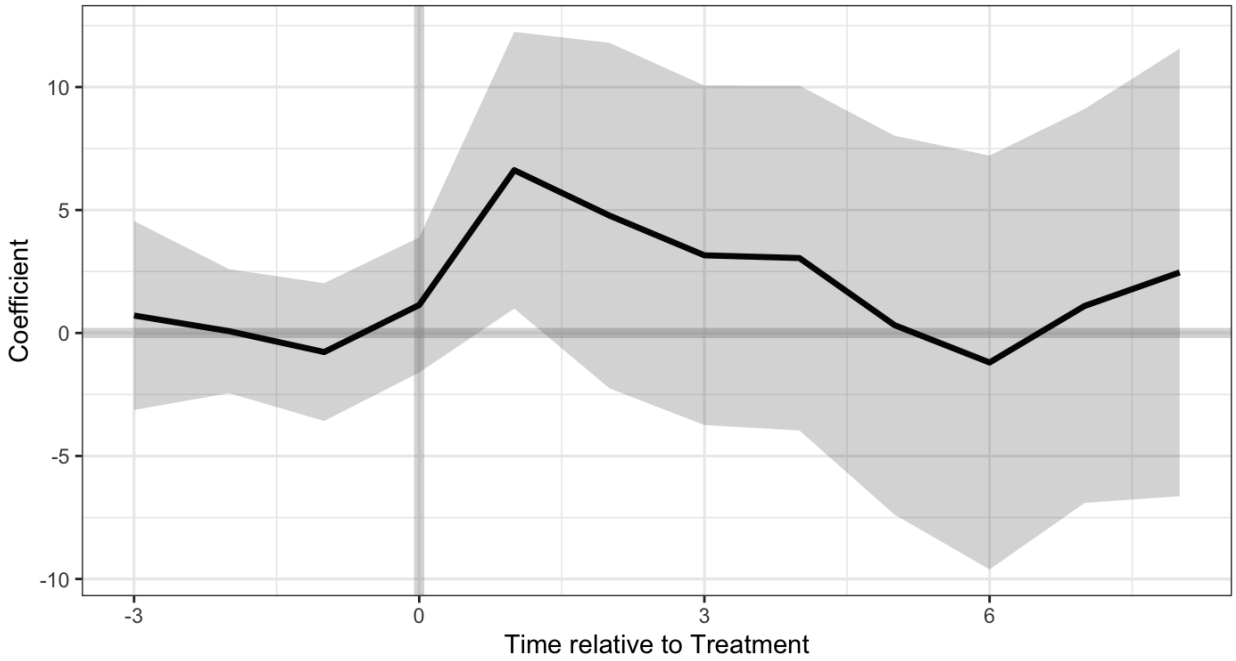
Effects for Black Students

These effects were similarly observed for Black students; since four of the treated elementary schools have almost 100% Black students and almost 100% economically disadvantaged students, these measures are somewhat synonymous and explain those results. Using economically disadvantaged students as the outcome captures the effect at schools where other minorities are a larger enrollment subgroup, like Hispanic students. These effects are positive for Black students as well, though slightly less in magnitude and significance (ATT=3.12, p=0.138). Similarly, this effect is largest and most significant in the 1st "treated" year: ATT=6.62, p=0.021.[7]

[7] Appendix Table 3 has complete ATT results.

Figure 13

Family Model: Estimated ATT on Percentage of Black Students with Strong Attendance

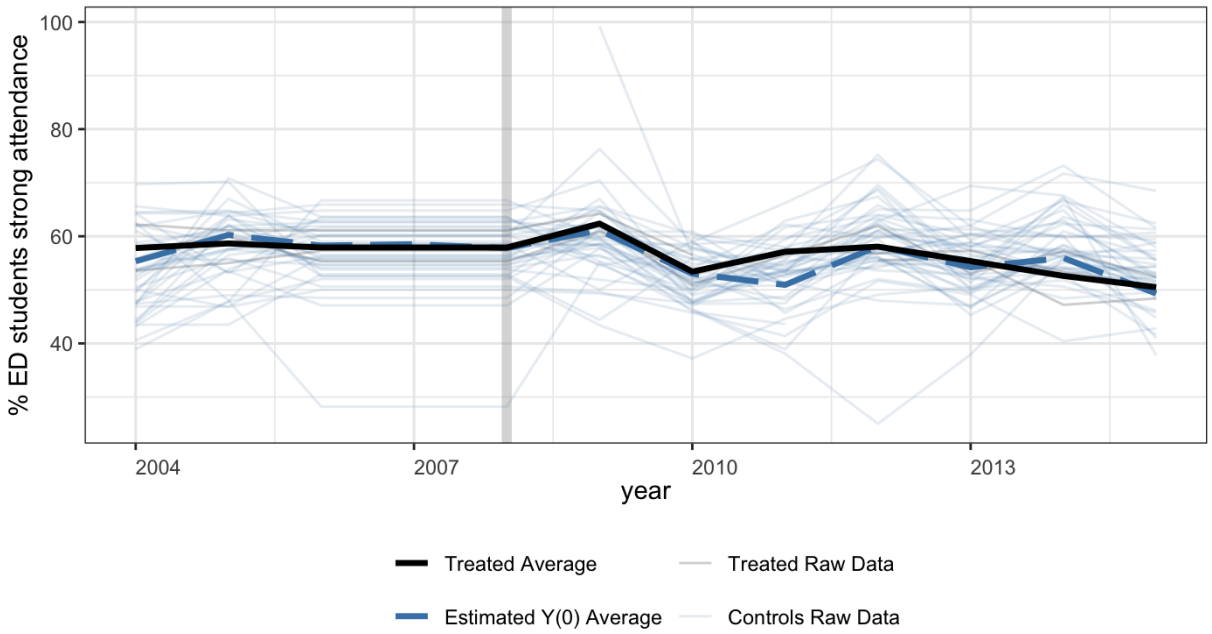


Placebo Counterfactuals

A placebo counterfactual trial was conducted using the nearest neighboring untreated schools of the treated schools (3 used, some had the same neighbor) to confirm the overall ATT result significance. These placebo results estimated a mild negative effect (-0.58%) of affordable housing on strong attendance, starkly different from the significant positive effect found in all models of the treated units. This confirms that it's likely not microgeography-specific influences leading to attendance rate changes. Visually, there's minimal divestment between the placebo treated line and its counterfactual.

Figure 14

Placebo Counterfactual- Neighboring Schools (2008)



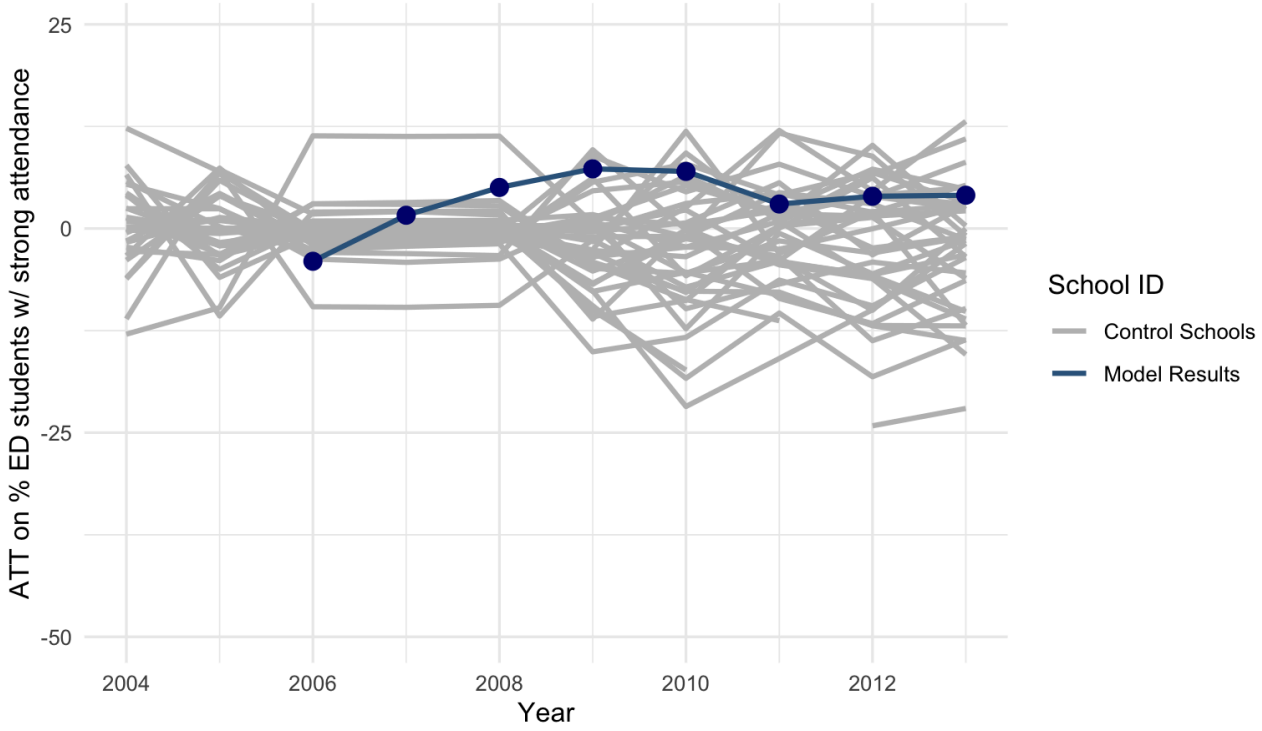
An additional placebo trial was done by running a GSC model on all control schools to capture the exact distribution of the expected effects of the placebo interventions. One can then compare the placement of the treated schools model amongst the placebos. For this, the GSC model was run for each control elementary school open since 2004; the treatment year was set to 2008, to choose a commonly treated year that's after the stagnant data. The results of these ATTs were stored to compare the significance of these findings. Notably, this trial finds the model's ATT as 4th highest out of 41 trials, which means the likelihood of estimating an ATT of the magnitude of the treated schools' ATT under a random permutation of the housing intervention in the data is 0.097%, within a 90% confidence level. It also finds the 1-year ATT effect to be the 4th highest. 1 strongly outlying result with a pre-treatment RMSE that was 3.5 times greater (10.16 vs. 2.95) was removed: Lake Windward Elementary School, which had, over the study period, a 3-6% economically disadvantaged (ED) student enrollment rate and had noisy outcome

data as a result. Additionally, all three of the placebo schools with higher ATTs had average ED student enrollment rates of under 10%, likely also creating noisy outcome data.

Comparing the two-year ATT effects similarly place the family development model 3rd highest out of 41, a significance level of 0.073. Again, the two schools with a higher ATT had an average of 7% ED student enrollment, speaking to noisy attendance data from such a small proportion of the student body. One's pre-treatment RMSE was 6.62, compared to 2.95 from the treated model. This persisting gap in ATT results indicates that these treated results are more significant compared to placebo trends, and not a result of an overfitted model.[8]

Figure 15

Placebo Counterfactual: Family Model ATTs for All Control Schools



Note: This graph inaccurately maps the treated model results, as it standardizes them onto years. The treated model year effect is adjusted to visually begin in 2008 to align with the placebos.

[8] Appendix Table 6 for full placebo ATT results

Individual School Counterfactuals

Graphing individual treated schools reveals idiosyncrasies in the pre-treatment fit quality and post-treatment effects, yet generally positive ATTs on strong attendance.

Figure 16

Family Model- Gullatt Elementary

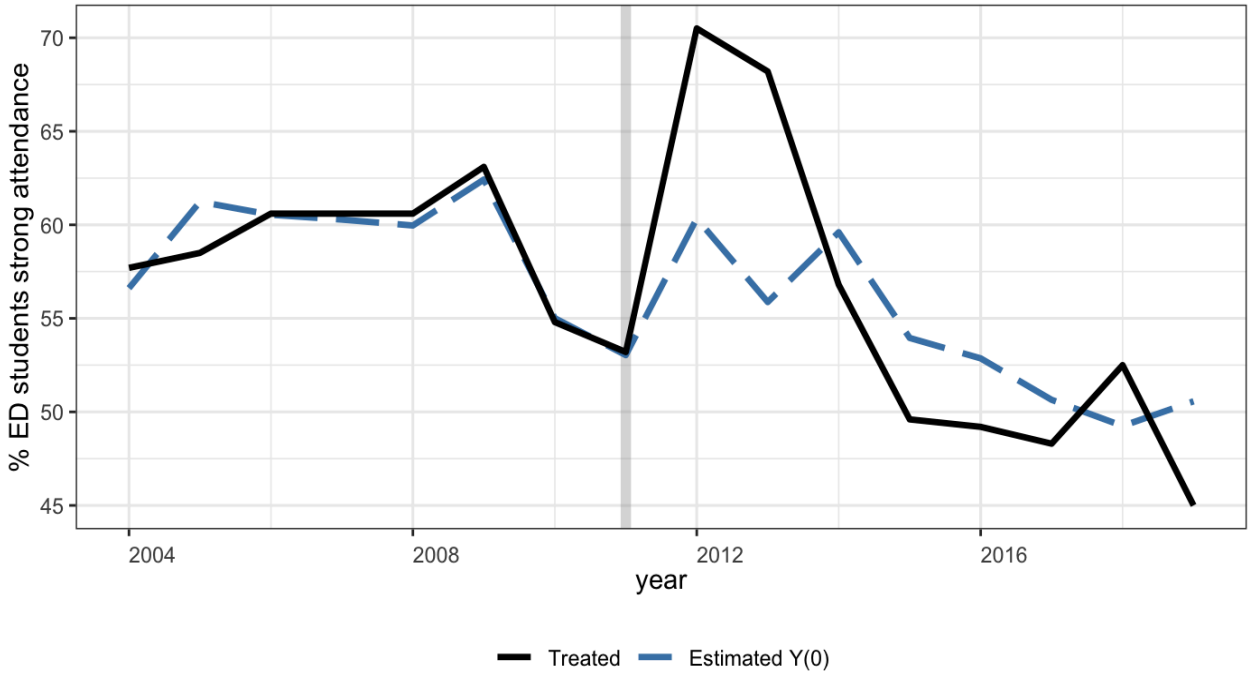


Figure 17

Family Model- H.E. Holmes Elementary

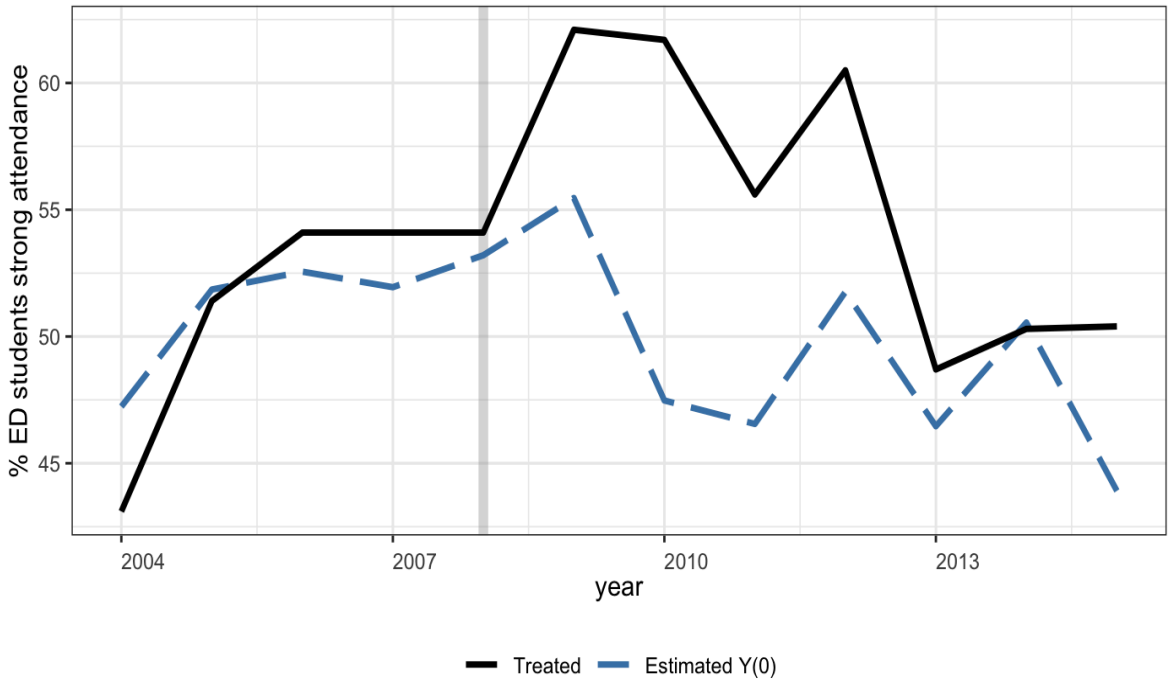


Figure 18

Family Model- Renaissance Elementary

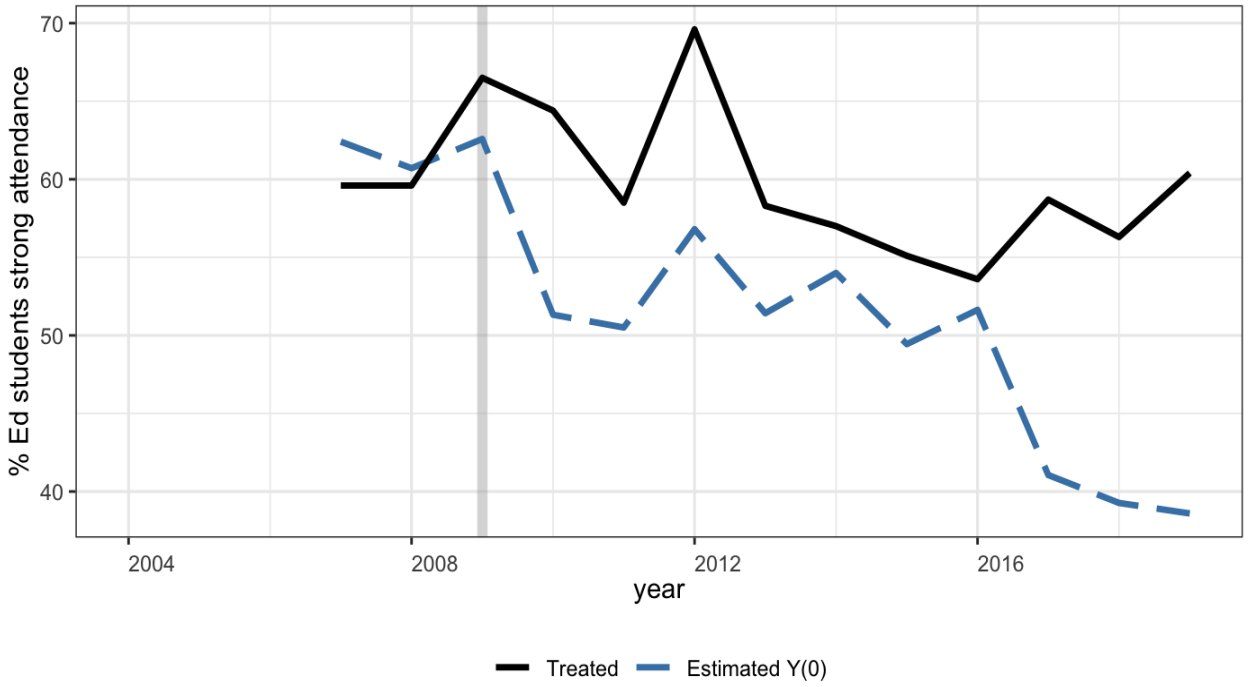


Figure 19

Family Model- Randolph Elementary

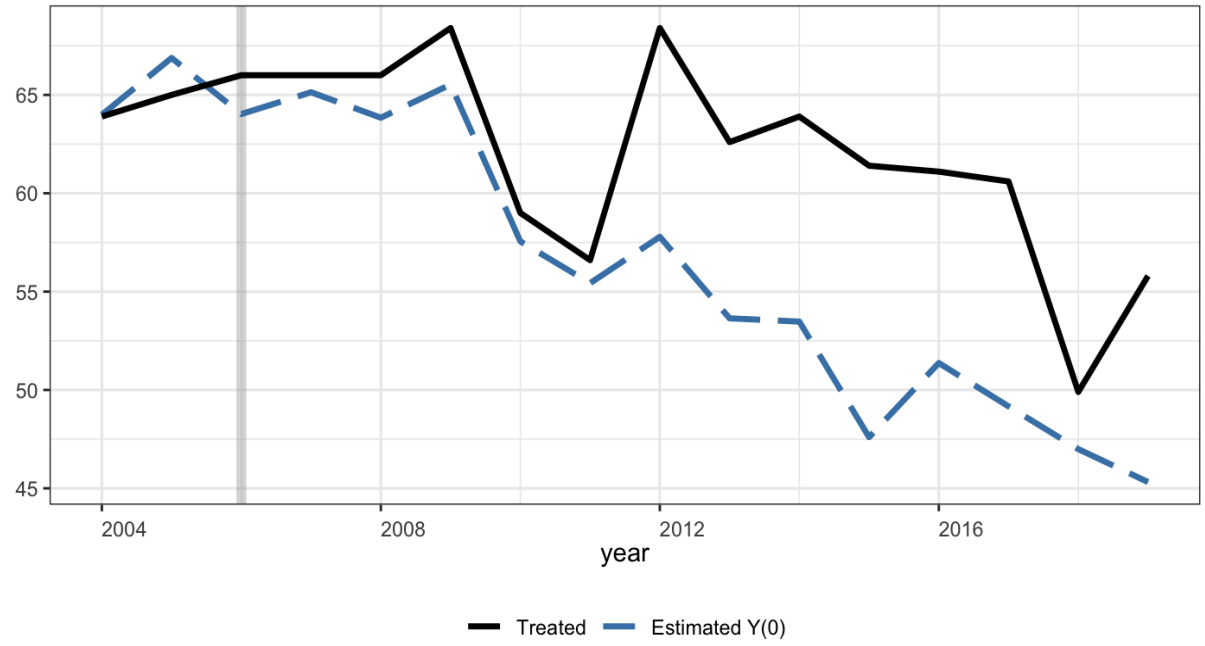
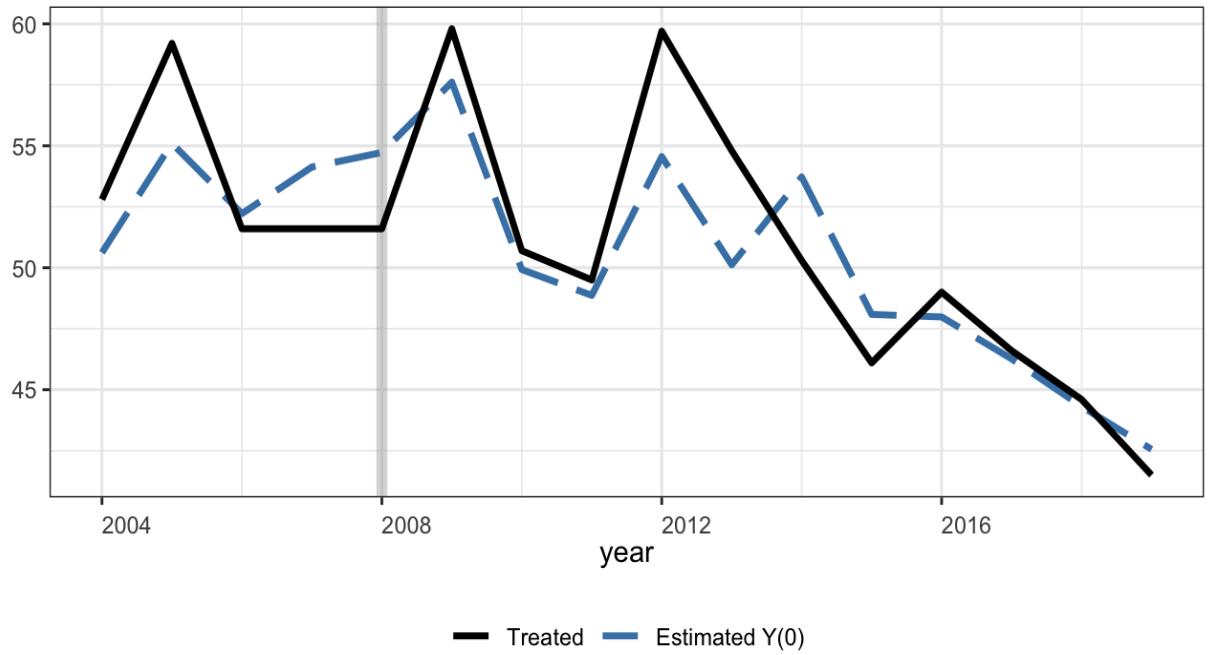


Figure 20

Family Model- Brookview Elementary



Pre-treatment periods:

The pre-treatment periods are used to assess the quality of the counterfactual's match: while the average ATT model has a relatively strong fit, the individual schools have less accurate pre-treatment matches. This demonstrates the disadvantage of such a small sample size; individual data from a school is quite noisy due to inconsistency in self-reporting.

Post-treatment periods:

The ATT estimates remain positive across post-treatment periods. In particular, all schools demonstrate a significant boost in the next two years underestimated by their counterfactual and placebo counterfactual.

Discussion

These results provide evidence supporting the beneficial role of affordable family housing developments in improving attendance among economically disadvantaged students in FCS, particularly prominent shortly after housing interventions begin and continuing on in the longer term. A new subsidized family housing development in an elementary school zone is associated with a 7.74% point increase in the percentage of economically disadvantaged students with strong attendance (missing 5% or fewer school days). These effects are positive for Black students as well, though slightly less in magnitude and significance (ATT=3.12, p=0.138).

1-year effect:

The model had the highest ATT estimates for the years immediately post-intervention (year 1: ATT=8.61, p=0.0019, year 2: ATT= 9.48, p=0.00125). This suggests the effects of housing stability on attendance might be both immediate and cumulative over time. The immediate benefit the following year can be explained by examining the number of family units a school receives: as seen in the data exploration, most have around 200 units. Examining total

student enrollment in the first post-treatment year shows a significant uptick in student count. Brookview Elementary's student count increased by 183 (from 587 to 770) following the introduction of its new family development. This increase was less upon the introduction of the rehabilitated LIHTC units. Gullatt Elementary had a 218 increase (325 to 543), H. E. Holmes had a 123 student increase (753 to 876) and Renaissance Elementary had a 310 increase (958 to 1,268). Randolph Elementary did not appear to have a change in student body count and was also a rehabilitation project; there may have been explicit efforts to keep affected students at Randolph Elementary.

These are significant proportions of the student body, and if this influx is indeed primarily students from new affordable housing developments, they will be captured in the economically disadvantaged student bucket and explain why this effect is seen so immediately the following school year. In theory, these are clusters of economically disadvantaged families where school transportation can be organized en masse to remove that as a barrier to attending school. If the families moving into here were formerly homeless, it aligns with insights from FCS social workers that even things like consistent access to a laundry machine can improve a child's school attendance. Decreased rent burden on a family increases money available for healthcare for illness or injury, which is a predictor of low attendance. It also may decrease hours that parents need to work, increasing their ability to take their child to school. As proposed by Suglia (2011), families that were "doubled-up," the most common practice for unhoused families in FCS, may now have a lower risk of illness transmission from less crowding.

These findings support the research hypothesis: that federally subsidized affordable housing positively affects the school attendance outcomes of economically disadvantaged students, likely by stabilizing their housing situation, thus reducing absenteeism. Barriers like

frequent school mobility, no clean clothing, illness, and changing bus routes all may be reduced with affordable housing. The generalized synthetic control method and the strength of its overall pre-treatment match increase confidence in these results.

Poor fit: Brookview Elementary

Brookview received two LIHTC rehabilitations in 2004 and 2005 and a new family construction in 2006, so using 2007 as the treatment year may include benefits from the first developments; there was a bump in 2005 after the first construction, in line with the ATT results. Brookview also reported the exact same attendance data from 2006 to 2007, meaning that value is stagnant from 2006-2008 in this estimate. Details on where families were displaced to during rehabilitation construction was not able to be found– they may have been assisted in finding housing within the school zone, or were more housing insecure and contributed to the variance in Brookview Elementary's attendance patterns. Some LIHTC applications include an explicit plan for relocating residents nearby; their rehabilitation applications indicated these units were over 85% occupied but didn't include a rehousing plan. Ultimately, the spread of treatment and data quality made the pre-treatment period a less accurate reflection of pre-intervention attendance.

Limitation: Few Pre-treatment Periods

A significant limitation is a lack of observable data for many years before treatment. There seem to be district-wide trends in attendance, so increased pre-treatment observations would allow the counterfactual model to better account for these and increase the quality of individual school pre-treatment matches. A model was run with the years placed into service one later to give a minimum of 3 pre-treatment periods, rather than 2. This effect was positive, but smaller (ATT=5.587, p=0.0052) and actually increased overall pre- and post-treatment error; the

boost is clearly in the school year directly following its opening, so moving the treatment year three years past its opening weakens the effect estimation.

Policy and Future Implications

This study confirms the role that affordable family housing developments can play in improving educational outcomes through increased school attendance. Attendance serves as a proxy measure of child well-being by capturing immediate reductions in barriers such as homelessness transportation issues. It may also reflect benefits to families who were housing-insecure and cost-burdened but not necessarily homeless, such as reduced parental work hours or transportation burdens. Future studies should aim to clarify the populations most impacted by these developments— the ability to distinguish between previously homeless students and those from low-income but stably housed backgrounds may reveal varying impacts on attendance.

While student homelessness is a clear contributor to lower attendance through mechanisms enumerated by FCS employees, the data on the number of homeless students at each FCS school is private, preventing the ability to control for the enrollment percentage of homeless students. This in itself would be an interesting outcome measure to illuminate if family developments are helping student homelessness decrease, or if they are serving housed but cost-burdened families.

Additionally, the intention was to capture the broader impact of affordable housing on child wellbeing, not just school attendance. Finding longitudinal micro-level data points was a massive challenge in carrying out that task. Desired future data includes measures of student academic performance like grades or standardized tests, involvement in extracurricular activities, parental engagement and time spent with children, and the prevalence of Adverse Childhood

Experiences (ACEs). These would encapsulate the holistic effects on child well-being housing can have.

Affordable housing may also aid in prominent child welfare concerns. For example, stable housing when previously homeless has been associated with significantly reduced incidents of abuse and neglect. Previous research, such as that by Tapper (2010), shows supportive housing dramatically lowers subsequent substantiated maltreatment cases for children. Incorporating data on child safety outcomes, like sexual and physical abuse rates, would be another important implication of this subject.

Policy-wise, the demonstrated positive impacts on attendance solidify the demand for expanded investment in affordable housing, particularly through the Low-Income Housing Tax Credit (LIHTC) program. Given the federal reductions over the past two decades in housing support and voucher availability along with diminished funding for public housing renovations, federal and local organizations must recommit to affordable family housing. Importantly, “these shrinking resources are not the result of diminishing need” (Ellen 2016). This study gives evidence that expanding LIHTC family developments will directly contribute to stabilizing families, subsequently improving student attendance, and supporting broader family and community well-being.

In conclusion, these findings demonstrate strong support for the construction and expansion of family-targeted affordable housing. Future research that captures holistic measures of child well-being will further show how affordable housing can be a tool for educational equity and child development.

Limitations

Several limitations influence the validity and generalizability of this study's findings:

1. Internal Validity

Internal validity is crucial for accurately isolating the causal relationship between federally subsidized affordable housing developments and improvements in student attendance. Although matching covariates were used to reduce selection bias, unobserved factors such as school-specific attendance incentives or changes in school policy and zones could have influenced attendance outcomes independently of the housing developments. Future studies could address these threats by collecting detailed contextual data on school-level interventions or policy changes.

2. Model Specification and Measurement

The current analysis employs a binary treatment variable indicating the presence or absence of federally subsidized housing without differentiating treatment intensity or scale. This is particularly relevant given variability in unit count—most developments were around 200 units, except for Brookview with 600 units. However, 400 of those were rehabilitation units, which may influence attendance outcomes differently. A more precise future analysis would model treatment intensity (e.g., number of units, occupancy rate) and distinguish between new construction and rehabilitation projects.

3. Exclusivity to Federally Subsidized Units

The analysis exclusively considers federally subsidized housing developments, excluding privately funded or free-choice housing voucher units, potentially underestimating overall impacts on attendance. Capturing voucher impacts was limited to project-based developments using Section 8 vouchers. Future research could strengthen validity by incorporating privately

funded affordable housing and detailed voucher utilization data at the household level to more comprehensively capture the housing stability intervention.

4. Tenant Move-in Timing

Precise tenant move-in dates were approximated based on unit placement into service dates. The assumption that units reached full occupancy immediately upon opening likely introduces inaccuracies, particularly as initial occupancy and tenant demographics (e.g., exact move-in dates, tenant ages, number of elementary-age children, prior residential status such as homelessness or in-district moves) were not available. This study chose a two-year lag to ensure a full year of student attendance data post-intervention, but potential partial-year attendance effects could be underestimated for families moving in during the first year. Future studies would benefit from tenant-level demographic data, exact occupancy dates, and household characteristics to enhance precision in understanding timing and intensity of impacts.

5. Predominance of Senior Housing Developments

The prevalence of senior-focused housing substantially limited the availability of family-targeted affordable housing developments, constraining the pool of eligible interventions. Notably, North Fulton had no recent family-targeted developments, restricting generalizability of findings across the entire Fulton County Schools district. Future research should seek a broader set of family-targeted interventions across diverse geographic settings to validate generalizability.

6. Data Access and Outcome Measurement

Many relevant wellbeing-related metrics were inaccessible at school or census tract levels, limiting the depth of outcomes analyzed. Specifically, metrics such as student homelessness, adverse childhood experiences (ACEs), standardized test scores, discipline

records, and health outcomes (e.g., asthma-related ER visits) were unavailable. Additionally, the pre-treatment matching period was relatively short. Future research should prioritize comprehensive outcome data, increased pre-treatment matching periods, and collaboration with schools to improve data access and outcome measurement precision.

7. Data Reporting Issues

Reliance on school-reported attendance data introduced potential inaccuracies, including repeated attendance figures from 2007–2008 due to missing data, and inconsistent reporting. These inconsistencies potentially weaken the counterfactual comparison and obscure immediate impacts for developments placed into service around the time of these data gaps. Additionally, attendance rate disruptions caused by the COVID-19 pandemic truncated these observations in 2019.

8. Geographic Scope and Generalizability

Findings pertain specifically to South Fulton within Fulton County Schools, restricting generalizability to broader contexts, particularly given the limited number of treated units. Impacts observed in lower-density suburban areas may differ substantially from higher-density urban contexts like the city of Atlanta. Including neighboring school districts, such as Atlanta Public Schools (APS), could increase the number of relevant donor schools and better capture diverse community contexts, improving both matching quality and external validity. Future research should incorporate a wider geographic and demographic scope to enhance the transferability of results.

Conclusion

This study shows that federally subsidized affordable housing significantly increases school attendance for economically disadvantaged (≤60% AMI) elementary school students, particularly predominantly Black student populations in South Fulton. It finds subsidized family housing development in an elementary school zone is associated with a 7.74% point increase in the percentage of economically disadvantaged students with strong attendance (missing 5% or fewer school days) These effects are positive for Black students as well, though slightly less in magnitude and significance (ATT=3.12, p=0.138). The introduction of affordable family housing developments into a school zone yielded a notable and immediate improvement in attendance, with an ATT of 8.61% points (p=0.0019) in the year after opening, and 9.48 points in the second year (p=0.0012). Despite data limitations, like an exclusive focus on federally subsidized housing, a low quantity of family developments, and restricted availability of relevant outcome measures, the positive correlation between stable housing and improved educational outcomes is clear. Addressing housing insecurity is an urgent requirement in breaking the cycle of continuing economic and racial inequities in education and childhood outcomes.

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Appendix

Appendix Table 1
2007 Characteristics of Treated and Donor Schools (Pre-intervention for all)

School	Enroll % ED	% ED Strong Attendance	Enroll % white	Enroll % Black	Enroll % Hispanic	Tract % Black	Tract % white	Tract % Hispanic	% child poverty	Average Rent	Home Value	Household Income
Brookview	87	51.6	0	95	1	0.96	0.04	0.01	0.48	776	102300	26944
Gullatt	87	60.6	0	95	2	0.91	0.05	0.01	0.55	836	79600	28529
Hamilton E. Holmes	87	54.1	1	95	2	0.80	0.16	0.10	0.31	1093	97800	41402
Randolph	41	60.1	0	99	0	0.92	0.05	0.03	0.04	1157	197700	83798
Renaissance	43	59.6	3	91	1	0.91	0.06	0.01	0.13	841	166800	60972
All Controls	40	56	39	36	13	0.32	0.55	0.09	0.16	1183	264718	79993
Conley Hills	94	59	2	72	25	0.63	0.26	0.27	0.54	883	101000	34957
E. C. West	67	57.3	5	73	15	0.40	0.56	0.11	0.16	925	143000	51907
Hembree Springs	25	56.3	55	12	21	0.02	0.87	0.04	0.02	1606	274900	99355
Liberty Point	82	54.7	2	90	6	0.78	0.15	0.10	0.30	878	105700	46486
Mount Olive	80	61.1	1	90	7	0.77	0.09	0.18	0.35	896	113600	45283
Nolan	80	62.7	0	98	0	0.96	0.02	0.02	0.17	1352	105900	50179
Oak Knoll	84	55.3	1	67	31	0.80	0.16	0.10	0.31	1093	97800	41402
College Park	93	61.6	0	83	14	0.63	0.33	0.09	0.75	637	195100	33139
Findley Oaks	3	58.6	63	6	3	0.24	0.44	0.09	0.06	1421	263700	85551
Abbotts Hill	6	58.5	61	10	5	0.24	0.44	0.09	0.00	1421	263700	85551
Alpharetta	11	48.5	72	10	7	0.11	0.72	0.01	0.00	1102	287900	81992
Barnwell	6	52	72	11	3	0.05	0.76	0.03	0.00	1264	595900	176818
Bethune	83	61.9	0	96	1	0.91	0.03	0.08	0.38	1021	109500	49340
Cogburn Woods	4	56.1	81	6	3	0.08	0.84	0.06	0.01	1422	355800	135471
Crabapple	3	63.6	79	5	3	0.03	0.90	0.03	0.07	1337	429200	123068
Creek View	9	52.6	58	14	7	0.07	0.52	0.10	0.03	1084	372300	79688
Dolvin	7	64.8	67	7	6	0.13	0.69	0.14	0.20	1169	266700	91461
Hapeville	89	63.1	10	39	41	0.28	0.45	0.34	0.62	1007	111700	36435
Heards Ferry	40	60.2	50	11	33	0.04	0.93	0.03	0.06	1934	567600	143158
Heritage	91	50.6	0	97	1	0.96	0.00	0.01	0.43	942	95200	28052
High Point	74	47.1	14	17	59	0.07	0.89	0.30	0.27	906	436600	54105
Hillside	30	55.8	52	16	23	0.10	0.81	0.11	0.00	1028	236100	76442
Jackson	59	55.7	27	17	49	0.10	0.83	0.04	0.03	1035	242100	76279
Lake Windward	3	28.2	62	9	4	0.05	0.71	0.07	0.02	1193	322300	96875
Lee	78	46.5	1	96	2	0.78	0.15	0.10	0.30	878	105700	46486
Manning Oaks	21	53.8	42	21	15	0.21	0.58	0.15	0.05	1099	197100	61719
Medlock Bridge	10	60.2	49	10	3	0.14	0.56	0.06	0.07	1284	364600	115974
Mountain Park	4	63.6	87	6	1	0.13	0.81	0.04	0.01	1775	587500	160431
New Prospect	6	52.5	68	8	5	0.21	0.58	0.15	0.05	1099	197100	61719
Northwood	29	56.5	52	17	21	0.10	0.81	0.11	0.00	1028	236100	76442

Ocee	10	60	62	9	6	0.04	0.87	0.02	0.04	1204	278000	104867
Palmetto	80	58	18	65	13	0.40	0.56	0.11	0.16	925	143000	51907
River Eves	37	54.1	49	23	16	0.10	0.83	0.04	0.03	1035	242100	76279
Roswell North	31	54.6	56	19	16	0.08	0.87	0.02	0.12	1880	284700	81942
S. L. Lewis	83	55.4	0	97	2	0.83	0.13	0.07	0.38	878	132600	42651
Shakerag	2	66.7	42	7	2	0.11	0.51	0.02	0.09	1218	291800	94300
Spalding Drive	58	62.6	23	28	38	0.35	0.63	0.17	0.19	1098	263600	50264
State Bridge Crossing	8	61	54	12	6	0.14	0.56	0.06	0.07	1284	364600	115974
Summit Hill	1	52.9	88	5	2	0.13	0.81	0.04	0.01	1775	587500	160431

Note: Values in the 'All Controls' row with significantly different means from the treated units are marked with *. From US. Census Bureau. (2021). *American Community Survey 2005-2009.;* GOSA. (2024). *Downloadable School Data.*

Appendix Table 2
2013 Characteristics of Treated and Donor Schools (Post-intervention for all)

School	Enroll % ED	% ED Strong Attendance	Enroll % white	Enroll % Black	Enroll % Hispanic	Tract % Black	Tract % white	Tract % Hispanic	% child poverty	Average Rent	Home Value	Household Income
Brookview	96	50.3	0	97	2	0.94	0.02	0.02	0.35	955	88700	32938
Gullatt	94	56.8	1	87	10	0.92	0.04	0.03	0.22	942	110500	37674
H. E. Holmes	98	50.3	2	78	19	0.74	0.15	0.11	0.23	1352	111400	53134
Randolph	73	58.9	0	98	1	0.94	0.05	0.01	0.07	1355	233100	78743
Renaissance	74	57	2	93	4	0.89	0.09	0.02	0.06	1382	172100	71382
All Controls	47*	53	32*	38*	17	0.34*	0.53*	0.08	0.13	1505*	307579*	93448*
Conley Hills	97	55.1	3	63	31	0.51	0.42	0.15	0.30	979	100800	42079
E. C. West	76	57.2	2	82	13	0.53	0.41	0.09	0.29	1015	131500	52447
Hembree Springs	39	63	49	10	34	0.12	0.79	0.06	0.07	1560	335400	106615
Liberty Point	85	57.5	1	89	7	0.75	0.16	0.17	0.37	1054	108400	42265
Mount Olive	95	47.2	0	87	10	0.84	0.09	0.09	0.28	1085	122500	41674
Nolan	93	48.4	0	98	1	0.91	0.04	0.02	0.44	1147	123600	50657
Oak Knoll	93	53.4	1	61	37	0.74	0.15	0.11	0.23	1352	111400	53134
Findley Oaks	6	60.9	50	10	7	0.14	0.52	0.07	0.10	1601	342300	94219
Lake Forest	98	63.6	1	5	92	0.03	0.92	0.04	0.02	1527	418600	101341
Oakley	84	61.3	1	90	7	0.85	0.12	0.08	0.26	981	135900	41600
Abbotts Hill	11	67	45	12	8	0.14	0.52	0.07	0.10	1601	342300	94219
Alpharetta	22	56.4	61	17	10	0.12	0.78	0.08	0.16	1640	365000	117125
Barnwell	7	53.9	61	12	6	0.06	0.73	0.05	0.01	1643	677500	169181
Bethune	92	52.7	0	94	4	0.93	0.05	0.04	0.30	1304	110400	53103

Birmingham Falls	2	55.9	85	4	3	0.03	0.94	0.03	0.01	2975	650500	209484
Cliftondale	65	55.9	0	98	1	0.89	0.09	0.02	0.06	1382	172100	71382
Cogburn Woods	12	60.1	54	14	10	0.08	0.77	0.05	0.02	1826	442600	146431
Crabapple	2	58.3	65	4	6	0.07	0.82	0.04	0.03	2213	486500	153768
Creek View	12	65.9	42	12	12	0.13	0.51	0.09	0.04	1324	409300	90537
Dolvin	15	59.7	53	9	8	0.14	0.59	0.08	0.11	1500	342800	106417
Dunwoody Springs	70	57.1	20	51	23	0.44	0.48	0.09	0.04	1125	119700	60576
Feldwood	89	56.2	1	96	1	0.93	0.05	0.00	0.18	1199	110900	55926
Hapeville	95	52.4	6	30	61	0.39	0.45	0.20	0.16	895	113100	46875
Heards Ferry	5	67.6	83	6	5	0.01	0.94	0.01	0.01	3317	579500	169881
Heritage	100	40.4	1	95	3	0.92	0.06	0.04	0.41	968	96900	42154
High Point	55	57.3	32	18	42	0.14	0.74	0.19	0.12	1218	522300	68698
Hillside	61	51.8	32	20	43	0.13	0.75	0.08	0.11	1237	316100	88141
Isom Springs	81	66.6	10	46	37	0.44	0.48	0.09	0.04	1125	119700	60576
Jackson	67	54.1	24	26	45	0.17	0.78	0.18	0.08	1298	280100	72009
Lake Windward	8	50.6	55	8	9	0.10	0.65	0.09	0.04	1654	381400	130293
Lee	85	47	2	94	3	0.75	0.16	0.17	0.37	1054	108400	42265
Manning Oaks	31	53.2	28	25	22	0.14	0.53	0.09	0.02	1355	309100	78306
Medlock Bridge	10	73.2	41	11	8	0.12	0.57	0.05	0.03	1589	422500	114412
Mountain Park	7	53.9	81	6	5	0.03	0.94	0.03	0.01	2975	650500	209484
New Prospect	16	56.5	50	12	12	0.14	0.53	0.09	0.02	1355	309100	78306
Northwood	28	62.6	55	13	21	0.13	0.75	0.08	0.11	1237	316100	88141
Ocee	17	57.7	44	10	14	0.12	0.66	0.07	0.02	1534	375400	113056
Palmetto	88	54.3	9	65	21	0.53	0.41	0.09	0.29	1015	131500	52447
River Eves	43	53	41	25	24	0.17	0.78	0.18	0.08	1298	280100	72009
Roswell North	23	58.4	65	14	14	0.08	0.83	0.06	0.12	1979	361700	118819
S. L. Lewis	94	56.7	1	95	3	0.85	0.12	0.08	0.26	981	135900	41600
Shakerag	5	62.3	23	6	4	0.08	0.47	0.06	0.00	1415	375400	114439
Spalding Drive	36	64.9	47	23	20	0.25	0.65	0.18	0.10	1371	187300	76567
State Bridge Crossing	15	55.8	52	10	9	0.12	0.57	0.05	0.03	1589	422500	114412
Summit Hill	3	67.4	80	7	7	0.03	0.94	0.03	0.01	2975	650500	209484

Note: Values in the 'All Controls' row with significantly different means from the treated units are marked with *. From US. Census Bureau. (2021). *American Community Survey 2010-2014.;* GOSA. (2024). *Downloadable School Data.*

Appendix Table 3

CRCT Scores From Treated and Neighbor Schools (Family or Senior)

Year	Fulton County	Brookview	Campbell	Cliftondale	College Park	Gullatt	H. E. Holmes	Heritage	Palmetto	Parklane	Renaissance	Stonewall Tell
2004	94	94	93	-	90	90	81	80	89	91	-	86
2005	95	89	91	-	88	95	80	87	89	85	-	94
2008	90	79	88	-	83	75	77	69	85	77	85	94
2009	90	70	85	-	74	91	79	64	95	76	82	86
2010	92	84	94	86	69	83	83	72	91	87	85	92
2011	92	86	94	91	63	83	86	74	90	78	81	91
2012	92	73	91	93	-	80	81	72	87	68	83	96
2013	93	81	98	93	-	75	80	81	86	73	90	97
2014	94	80	94	95	90	83	75	77	94	81	91	96

Appendix Table 4

Family Model: Implied Weights of Controls for Individual Units

Control School	Brookview	Gullatt	H.E. Holmes	Randolph	Renaissance
Conley Hills	-0.0470	0.0064	0.0873	0.3252	-0.0968
E. C. West	-0.0135	0.0018	0.0251	0.0936	-0.0278
Hembree Springs	0.0241	-0.0033	-0.0447	-0.1666	0.0496
Liberty Point	0.0261	-0.0035	-0.0484	-0.1803	0.0537
Mount Olive	-0.0109	0.0015	0.0201	0.0751	-0.0223
Nolan	-0.0187	0.0025	0.0347	0.1293	-0.0385
Oak Knoll	0.0080	-0.0011	-0.0148	-0.0553	0.0165
College Park	-0.0431	0.0058	0.0800	0.2980	-0.0887
Findley Oaks	-0.0130	0.0018	0.0241	0.0899	-0.0267
Lake Forest	0.2837	-0.0385	-0.5266	-1.9619	0.5839
Abbotts Hill	-0.0295	0.0040	0.0548	0.2043	-0.0608
Alpharetta	0.0286	-0.0039	-0.0530	-0.1976	0.0588
Barnwell	0.0101	-0.0014	-0.0187	-0.0695	0.0207
Bethune	-0.0226	0.0031	0.0419	0.1560	-0.0464
Birmingham Falls	0.2098	-0.0285	-0.3894	-1.4506	0.4317

Cliftondale	-0.1803	0.0245	0.3347	1.2470	-0.3711
Cogburn Woods	-0.0215	0.0029	0.0399	0.1485	-0.0442
Crabapple Crossing	-0.0181	0.0025	0.0337	0.1254	-0.0373
Creek View	0.0254	-0.0035	-0.0472	-0.1758	0.0523
Dolvin	-0.0175	0.0024	0.0326	0.1213	-0.0361
Dunwoody Springs	-0.0003	0.0000	0.0006	0.0022	-0.0006
Feldwood	-0.0221	0.0030	0.0411	0.1531	-0.0456
Hapeville	-0.0251	0.0034	0.0467	0.1739	-0.0518
Heards Ferry	-0.0333	0.0045	0.0619	0.2306	-0.0686
Heritage	-0.0199	0.0027	0.0370	0.1379	-0.0410
High Point	0.0320	-0.0043	-0.0593	-0.2210	0.0658
Hillside	-0.0032	0.0004	0.0060	0.0223	-0.0066
Ison Springs	0.0617	-0.0084	-0.1145	-0.4265	0.1269
Jackson	0.0042	-0.0006	-0.0078	-0.0292	0.0087
Lake Windward	0.1507	-0.0205	-0.2798	-1.0424	0.3102
Manning Oaks	-0.0294	0.0040	0.0546	0.2034	-0.0605
Medlock Bridge	-0.0055	0.0007	0.0102	0.0379	-0.0113
Mountain Park	-0.0822	0.0112	0.1526	0.5687	-0.1693
New Prospect	-0.0119	0.0016	0.0221	0.0823	-0.0245
Northwood	0.0183	-0.0025	-0.0341	-0.1269	0.0378
Ocee	0.0189	-0.0026	-0.0352	-0.1310	0.0390
Palmetto	-0.0054	0.0007	0.0100	0.0372	-0.0111
River Eves	0.0145	-0.0020	-0.0269	-0.1001	0.0298
Roswell North	-0.0239	0.0032	0.0443	0.1651	-0.0491
S. L. Lewis	0.0054	-0.0007	-0.0099	-0.0370	0.0110
Shakerag	-0.0387	0.0052	0.0718	0.2674	-0.0796
Spalding Drive	-0.0405	0.0055	0.0751	0.2799	-0.0833
State Bridge Crossing	-0.0106	0.0014	0.0196	0.0731	-0.0218
Summit Hill	-0.0279	0.0038	0.0518	0.1930	-0.0574
Sweet Apple	0.0389	-0.0053	-0.0721	-0.2687	0.0800
Wilson Creek	-0.0169	0.0023	0.0315	0.1172	-0.0349
Wolf Creek	0.0549	-0.0074	-0.1019	-0.3795	0.1129
Woodland	0.0232	-0.0032	-0.0431	-0.1607	0.0478

Appendix Table 5

Family Model: ATT Estimates on % Strong Attendance for Economically Disadvantaged Students

Time Period	Estimated ATT	SE	Lower CI	Upper CI	p-value
Average ATT	7.739	2.207	3.41	12.06	0.00045
-2	-3.393	1.735	-6.79	0.01	0.05047
-1	1.410	1.631	-1.79	4.61	0.38728
0	1.823	1.747	-1.60	5.25	0.29678
1	8.614	2.786	3.15	14.08	0.00199
2	9.483	2.937	3.73	15.24	0.00125
3	4.861	3.038	-1.09	10.82	0.10965
4	4.893	3.402	-1.78	11.56	0.15039
5	3.605	3.910	-4.06	11.27	0.35646
6	4.133	3.765	-3.25	11.51	0.27229

Appendix Table 6

Family Model: ATT Estimates on % Black Students with Strong Attendance

Time Period	Estimated ATT	SE	Lower CI	Upper CI	p-value
Average ATT	3.120	2.109	-1.01	7.25	0.1389
-4	-0.560	1.931	-4.35	3.23	0.7717
-3	0.711	1.959	-3.13	4.55	0.7167
-2	0.075	1.285	-2.44	2.59	0.9536
-1	-0.774	1.429	-3.57	2.03	0.5880
0	1.140	1.400	-1.60	3.88	0.4154
1	6.620	2.868	1.00	12.24	0.0210
2	4.777	3.583	-2.25	11.80	0.1824
3	3.159	3.520	-3.74	10.06	0.3695
4	3.048	3.576	-3.96	10.06	0.3941
5	0.320	3.928	-7.38	8.02	0.9351
6	-1.199	4.291	-9.61	7.21	0.7800

Appendix Table 7

Placebo Counterfactuals: Family Model ATTs for All Control Schools

Elementary School	ATT (2009)	Average ATT	% ED Students (2009)	% Strong Attendance (ED) (2009)	% ED Students (2005)	% Strong Attendance (ED) (2005)
Medlock Bridge Elementary School	10.839	20.442	12	62.6	7	57.7
Ocee Elementary School	9.641	-5.398	13	76.3	7	64.8
Alpharetta Elementary School	8.881	4.184	10	61.4	11	49
Treated Schools Model	8.614	7.739	87	59.8	87	59.8
Barnwell Elementary School	8.579	7.263	8	60.8	5	47.8
Hillside Elementary School	6.166	-2.777	35	67	29	63.8
High Point Elementary School	5.671	7.721	68	57.7	80	53.5
Northwood Elementary School	4.615	2.871	32	65.5	24	60.2
Parklane Elementary School	2.407	2.050	90	59.2	92	54.5
E. C. West Elementary School	1.704	-2.081	66	61.9	61	55
Dolvin Elementary School	1.465	-5.955	9	70.4	8	63.8
Liberty Point Elementary School	1.352	3.117	81	60.7	81	55.6
State Bridge Crossing Elementary School	1.341	-0.869	9	64.7	6	63.2
Campbell Elementary School	1.280	3.199	84	57.9	79	57.7
Hembree Springs Elementary School	0.832	0.911	26	62	24	53.3
Shakerag Elementary School	0.630	7.865	3	60	3	47.8
Mimosa Elementary School	0.486	0.630	83	61.3	68	60.9
Oak Knoll Elementary School	0.164	-0.467	86	61	85	59.9
Roswell North Elementary School	0.140	-3.492	30	58.6	30	60.8
Spalding Drive Elementary	0.006	-4.932	58	65.6	61	61.9
Stonewall Tell Elementary School	-0.372	2.852	48	62.8	51	60.8
Jackson Elementary School	-1.006	1.948	63	58.6	55	57.6
Mount Olive Elementary School	-1.028	-5.512	81	64.2	77	61.1
Heards Ferry Elementary School	-1.146	5.250	6	54.8	43	53.8
Creek View Elementary School	-1.399	-8.564	11	64.5	8	70.2
River Eves Elementary School	-2.690	2.055	39	56.5	33	62

Palmetto Elementary School	-3.037	-3.243	82	59.8	74	61.8
Findley Oaks Elementary School	-3.462	-0.401	4	58.3	2	57.6
Sweet Apple Elementary School	-3.611	8.655	6	49.3	4	46.8
College Park Elementary School	-4.363	-4.886	91	58.2	90	57.3
Hapeville Elementary School	-4.884	0.948	90	59.2	91	58.8
Bethune Elementary School	-5.209	-5.396	85	59.6	84	61.2
Conley Hills Elementary School	-6.703	-6.399	91	56.2	89	67
Manning Oaks Elementary School	-6.837	-2.578	21	51.9	21	62.2
Heritage Elementary School	-6.862	-4.940	82	49.6	86	55.9
Nolan Elementary School	-7.708	-12.073	83	61.6	78	64.7
Abbotts Hill Elementary School	-9.311	1.679	7	50	4	56.5
S. L. Lewis Elementary School	-9.453	-21.350	81	59.5	83	58.6
Crabapple Crossing Elementary School	-10.799	-5.330	4	55.3	4	53.1
Mountain Park Elementary School	-11.096	-10.954	3	54.5	3	70.8
New Prospect Elementary School	-15.097	-2.621	7	43.4	6	63.9