

Final Report

April 2025



Prepared By:

QMSS 451 002 Students

On Behalf Of:

**Ypsilanti Neighbors
Improving Community
Engagement (YpsiNICE)**

About YpsiNICE



YpsiNICE (Neighbors Improving Community Engagement) was established to enhance connection, representation, and empowerment among Ypsilanti Township residents. Emerging from grassroots efforts and a strong commitment to equity, the organization aims to counteract a history of exclusion in local governance. YpsiNICE emphasizes that every voice matters in community shaping. By amplifying those historically marginalized to honor lived experiences, YpsiNICE recognizes that those most affected hold the keys to solutions.

YpsiNICE's **mission** is to strengthen neighborhoods through active, resident-led engagement. By prioritizing community voices, they aim to transform civic participation in Ypsilanti Township and foster trust and collaboration among neighbors by:

- **Creating** meaningful engagement opportunities for residents and leaders
- **Supporting** community leadership development
- **Emphasizing** transparency and lasting connections over fleeting projects
- **Ensuring** equity in decision-making processes

Through grassroots organizing and partnerships, YpsiNICE empowers community members to become catalysts for change, believing that true transformation begins at the local level.

Represented By:

Alex Thomas,
Co-Chair of YpsiNICE

About Our Team

We are seniors in the **Quantitative Methods in Social Science** (QMSS) minor at the University of Michigan. In our studies we have learned various methods of data analysis with a focus on practical application to social science topics.

In our capstone experience, **QMSS 451**, we have learned to manage projects addressing social science-related topics relevant to our greater Ann Arbor community. This semester we have received weekly guidance from Dr. Ajogbeje and frequent feedback from Alex Thomas while making use of Excel, Stata, R, Python, and Tableau, which we learned from prior QMSS courses.

In the Winter 2025 semester, our team was consulted to perform data analysis on behalf of YpsiNICE. The team was tasked with discovering and analyzing opportunities for Ypsilanti-area schools to attract students and promote their success.

Our Team



**Victor Lopez
Avalos**



**Cassidy
Baker**



Lani Bloom



**Aaryan
Chandola**



Baz Crow



Kayla Drifka



Lexa Jones



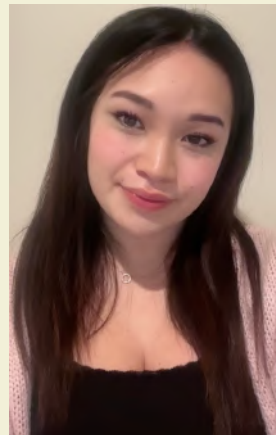
Isha Khan



Jin Kim



**Shravi
Kothari**



Lucie Lee



**Sophia
MacKinnon**

Our Team



**Brittany
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**Luz
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**Premma
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Claire Miech



John Reddy



**Samantha
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**Imogen
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**Michael
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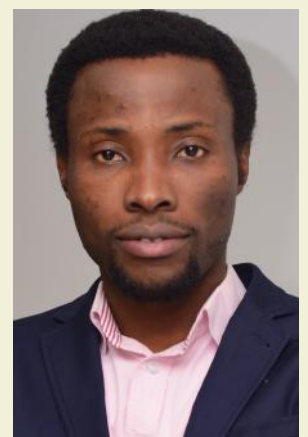
Kay Vollmar



Yipei Wang



Xiang Xu



**Dr. Korede
Ajogbeje**

Project Introduction

This project focuses on exploring **educational opportunities and inequalities** in Ypsilanti, a township in Washtenaw county, Michigan. However, rather than limiting the analysis to Ypsilanti alone, the approach extends to the state of Michigan as a whole, by examining other cities and townships that share similar characteristics with Ypsilanti. The aim is to determine whether the findings from Ypsilanti reflect broader trends across the state, uncovering common patterns or differences among comparable cities.

To facilitate a comprehensive analysis, we divided the project into three broad areas:

Accessibility and School of Choice

Our aim is to evaluate whether different policies or circumstances can aid or hinder students in accessing schools outside of their district. We investigated how factors such as **transportation access** influence student enrollment and departure at specific school districts, aiming to understand which school policies impact students' ability to attend their school of choice (SoC).

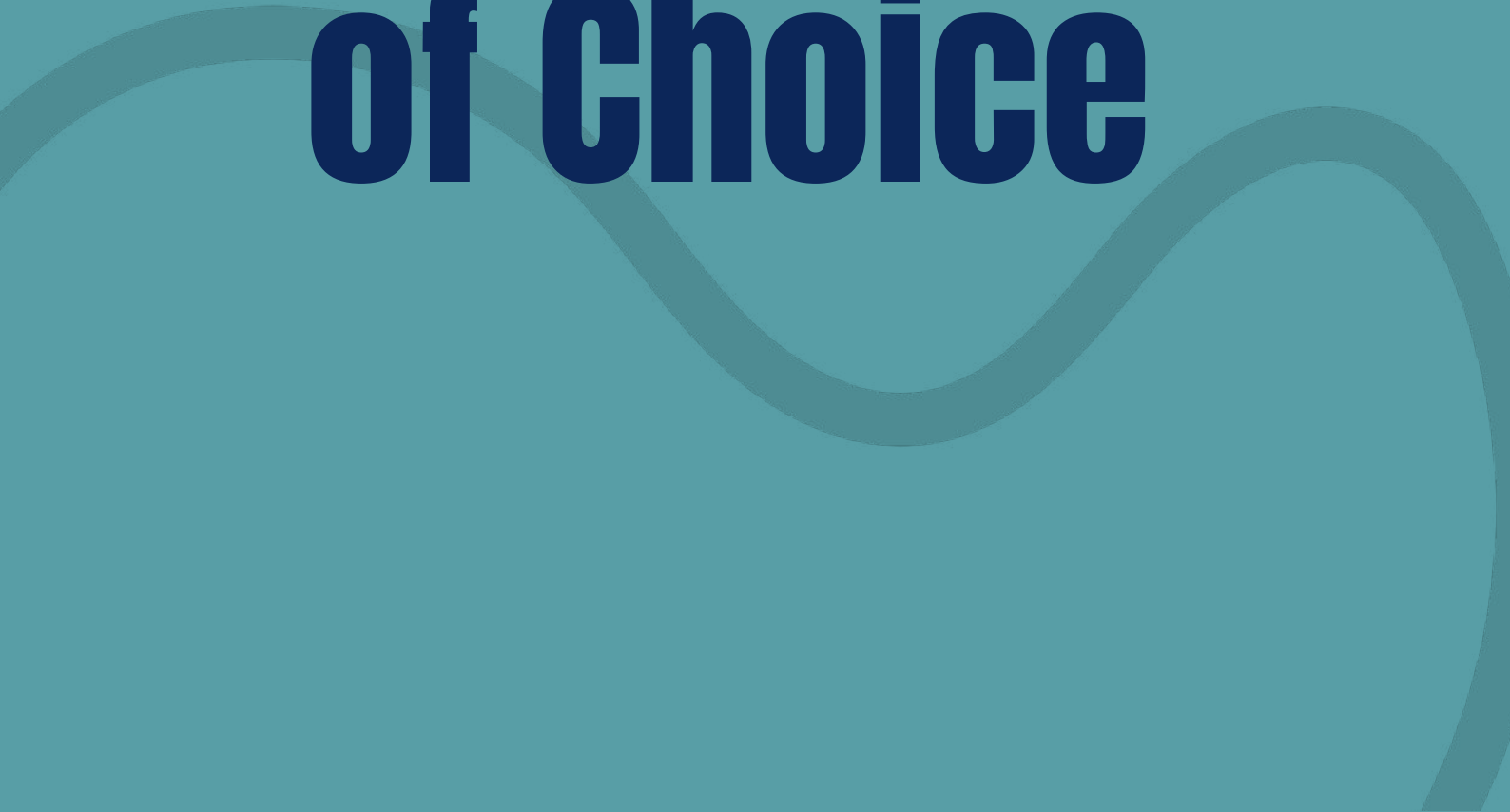
School Funding and Socioeconomic Impact

In this part, our aim is to clarify how **school funding and socioeconomic factors** impacts student academic outcomes. Here, we present essential factors that contribute to student accomplishment, evaluated through diverse metrics like standardized test results, attendance indicators, and enrollment in higher education, and shows essential factors that

School Disciplinary Inequalities

Our aim is to investigate whether **school discipline practices disproportionately affect Black students** and School of Choice participants in Ypsilanti and nearby districts. By analyzing suspension and expulsion data alongside school demographics and community-level factors, our goal is to identify patterns of inequality and provide insights that can inform more equitable disciplinary policies at the local level.

Accessibility & School of Choice

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Executive Summary

Michigan allows school districts to determine whether they are a **School of Choice (SoC)** or whether they allow out-of-district students to enroll in their school. SoC is meant to allow parents more autonomy in determining what school best fits their child's needs and interests. This part of the project focuses on examining whether students can utilize this policy based on school policy and transportation accessibility. We found that there were some districts with high levels of student migration out-of-district and high levels of student migration in-districts. However, student migration did not vary much based on factors like public and school-provided busing options or car availability.

Accessibility Background

Objectives

- Assess and compare the **educational opportunities** of the greater Ypsi area residents with respect to distance and transportation accessibility.
- Evaluate the **school-of-choice** program in Ypsi and its neighboring districts to gain insight into the accessibility of school choice.
- Extend our exploration into **comparable predetermined cities**.

Focuses

- School of Choice program and its impact on student enrollment.
- Transportation barriers and their effect on access to School of Choice schools to create district level comparisons.

Methods

- Gathered data from MI and US databases, submitted FOIA requests for inaccessible data, and analyzed **car ownership, transit availability, SoC acceptance**, and student migration.
- Prepared datasets through cleaning (i.e. removing duplicates and irrelevant data) and **standardizing** (i.e. ensuring consistency in data) procedures.
- Developed a base code used to create various forms of visualizations in R studio.
- Mapped **student enrollment and migration**.
- Compared transportation accessibility across districts.
- Visualized **disparities in educational access**.

Literature Review and State (MI) Legislation on SoC

Literature Review

K. Ukanwa, A.C. Jones, & B.L. Turner. 2022. School choice increases racial segregation even when parents do not care about race.

US schools remain segregated. **School choice can increase racial segregation, even when parents do not care about race.** Black and White parents value school traits differently. Black parents prioritize performance due to social mobility concerns. Unregulated choice worsens segregation, affecting 500,000+ kids per 3% expansion. Aligning preferences could reduce segregation.

Singer, J., & Lenhoff, S. W. 2022. Race, geography, and school choice policy: A critical analysis of Detroit students' suburban school choices.

Critical race spatial analysis examines how race and geography shape Detroit students' suburban school choices. Findings show their options were limited by racial segregation, concentrating in a few districts, with Black students facing more segregated, lower-quality schools than suburban peers.

Purpose of SoC

Schools of Choice programs provide students with **additional enrollment opportunities**, which range from allowing students to determine which school within the resident district they will enroll, to allowing non-resident students to enroll in a district other than their own. - Via Michigan Department of Education

State Legislation

Section 105/105c: permits local school districts to enroll students who reside in other local school districts within the same intermediate school district and allows enrollment of students who reside in school districts located in contiguous intermediate school districts.

Barriers to SoC

A limit on the amount of students a school accepts for their SoC programs. **Accessibility** (i.e. a school is not always immediately accessible by all means of transportation). **Disciplinary records** often determine acceptance.

School of Choice Analysis

Goal

Determine whether districts experience a net gain or loss of students, and identify key student movement/transportation trends to understand School of Choice program impact.

Focus Area

Student movement in Ypsilanti Community Schools, Lincoln Consolidated Schools, and Van Buren Public Schools.

Methodology

Leveraged 2023-2024 data from mischooldata.org to develop movement maps. For scope purposes, maps only show movement within WISD; however, the table below includes total movement (all districts within Michigan).



Heat Maps

Visualize where students are enrolled outside of their district.



Flow Maps

Shows where students move at the district-level



Transport Maps

Visualize transport options for SoC children & families

Summary of Key Findings

District of Residence	Inbound Students	Outbound Students	Net Movement
+ Lincoln Consolidated School District Total	476	841	-365
+ Van Buren Public Schools Total	585	796	-211
+ Ypsilanti Community Schools Total	364	1532	-1168
Grand Total	1425	3169	-1744

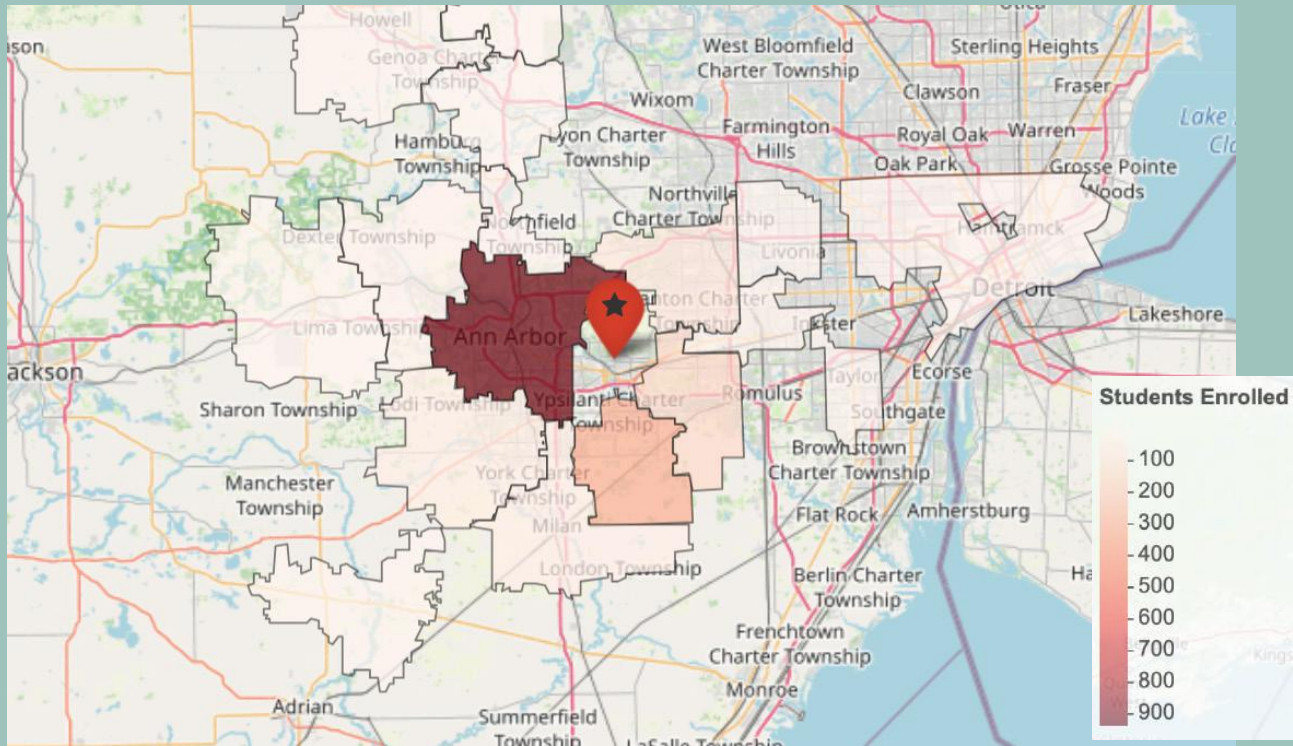
Net movement was calculated by subtracting Outbound Students from Inbound Students. As this metric is negative for all three districts, **they all experienced a net outflow of students** in the 2023-2024 school year. Ypsilanti Community Schools had the lowest amount of non-resident students electing to enter the district and the highest amount of resident students electing to attend a school outside the district, resulting in the highest net outflow score.

While the scope of our analysis did not include exploring why Ypsilanti Community Schools has such a large net outflow, potential factors include quality of education and rankings. As seen later in this report, school funding does not appear to be a contributing variable.

For a more detailed breakdown of movement, visit this [link](#).

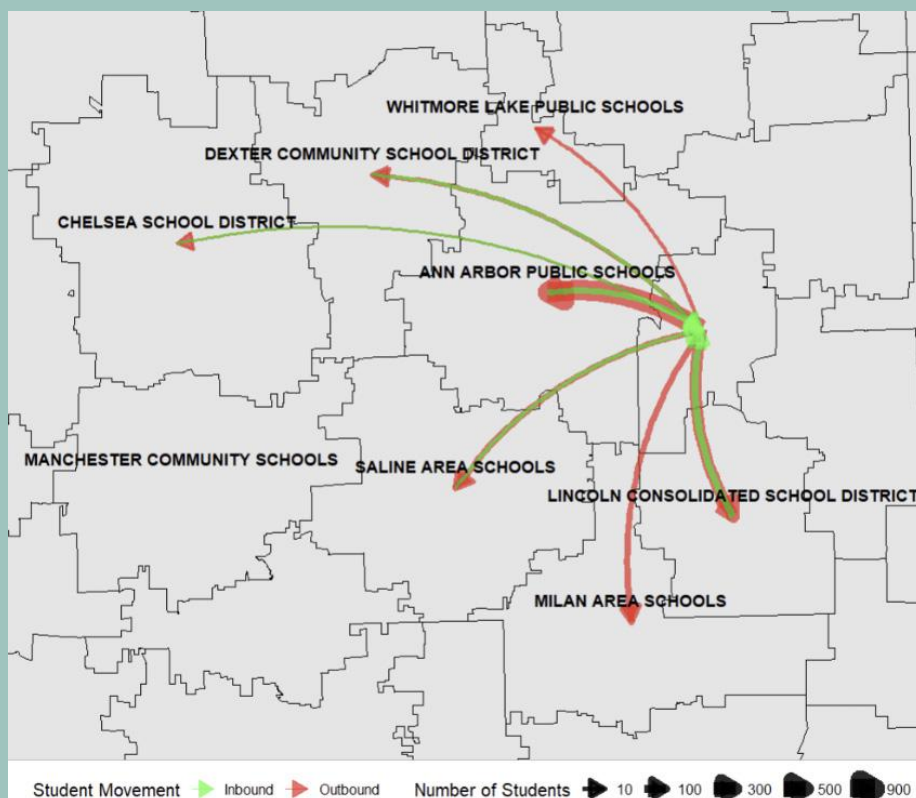
Where are Ypsilanti Community School District Students Going?

HEAT MAP: Students Moving Out



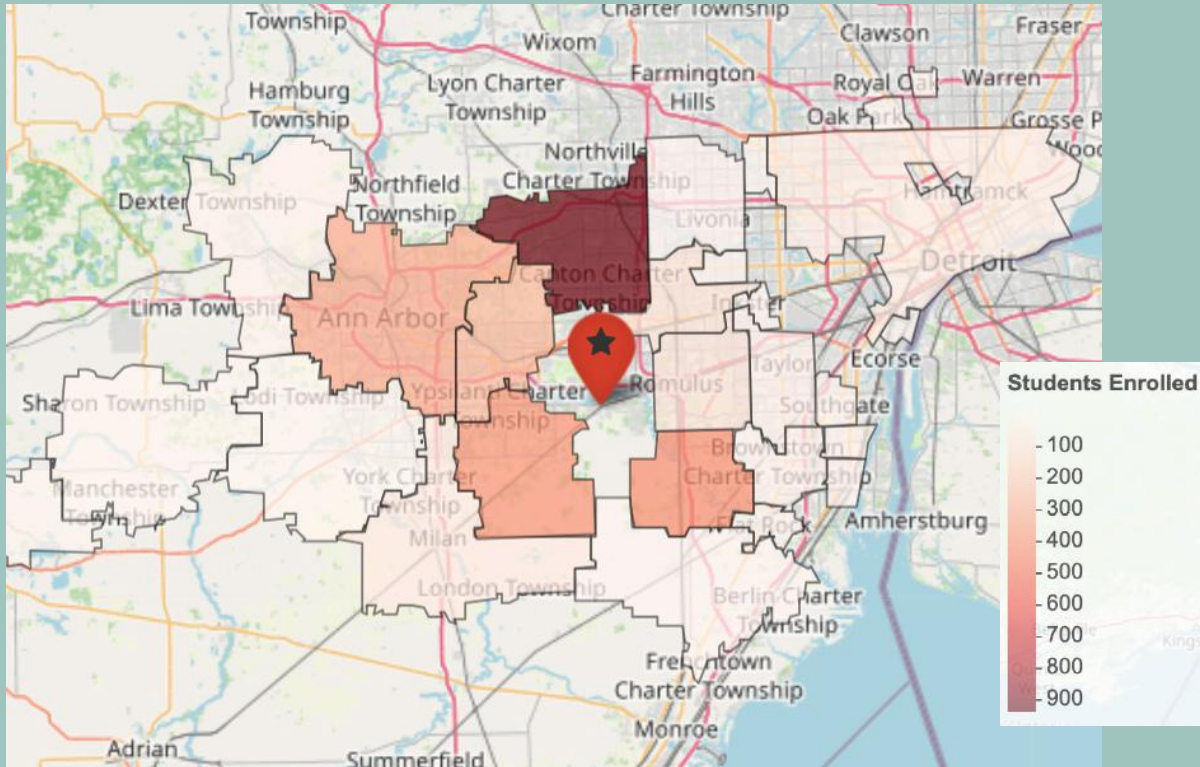
<https://cmiech.github.io/YpsilantiMovement/>

FLOW MAP: Students Moving In and Out



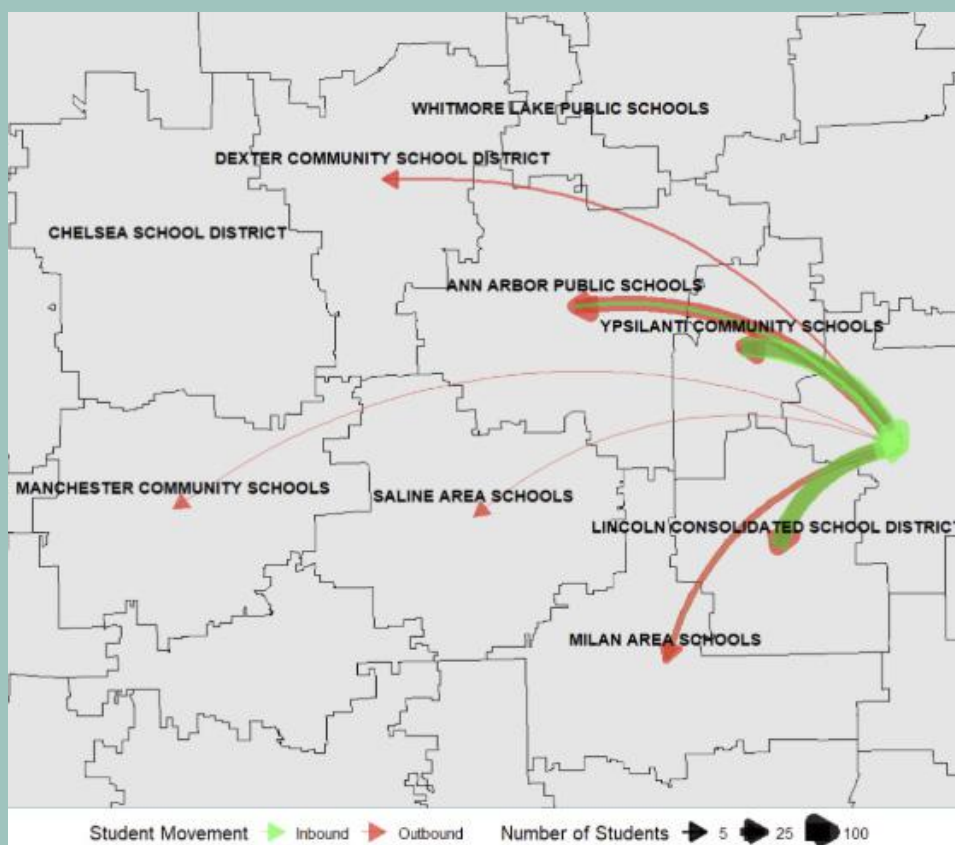
Where are Van Buren School District Students Going?

HEAT MAP: Students Moving Out



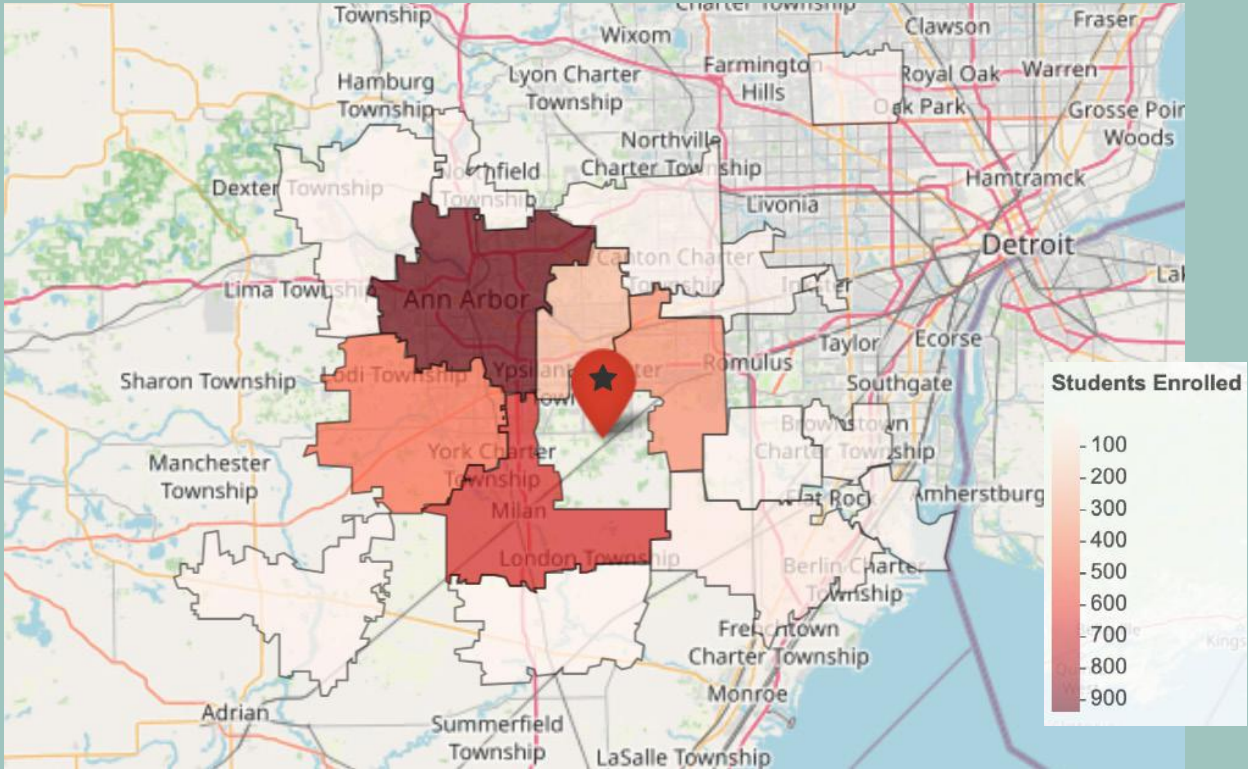
<https://cmiech.github.io/VanBurenMovement/>

FLOW MAP: Students Moving In and Out



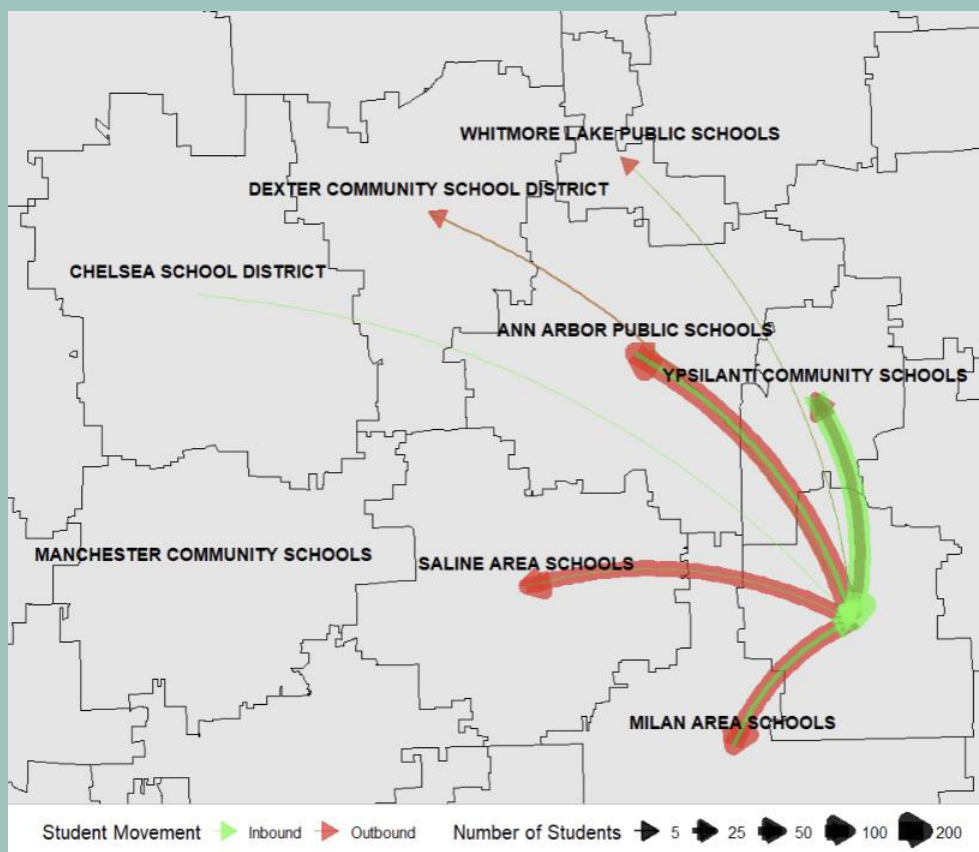
Where are Lincoln Consolidated School District Students Going?

HEAT MAP: Students Moving Out



<https://cmiech.github.io/LincolnMovement/>

FLOW MAP: Students Moving In and Out



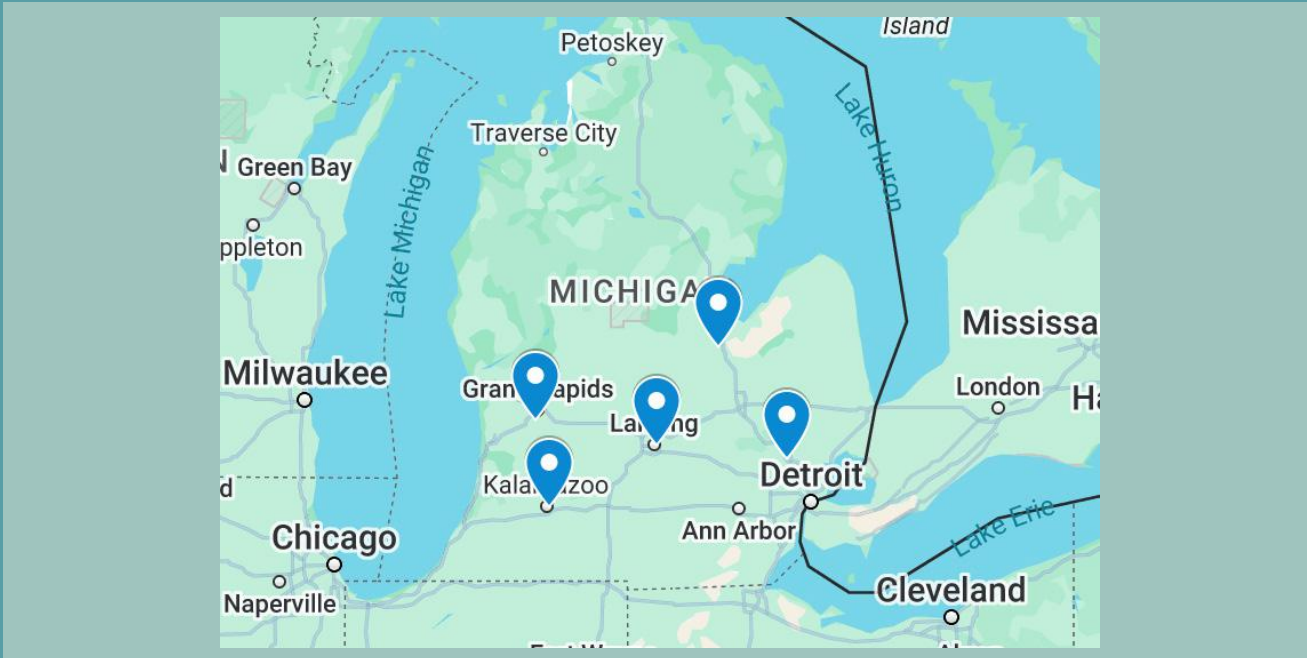
Student Migration in Cities Comparable to Ypsi

Area	Home District	Enrolled District	Inbound	Outbound	Net Movement
+ Kalamazoo Total			34	1910	-1876
+ Lansing Total			215	2935	-2720
+ Pontiac Total			3	2984	-2981
+ Saginaw Total			737	697	40
+ Wyoming Total			24	619	-595

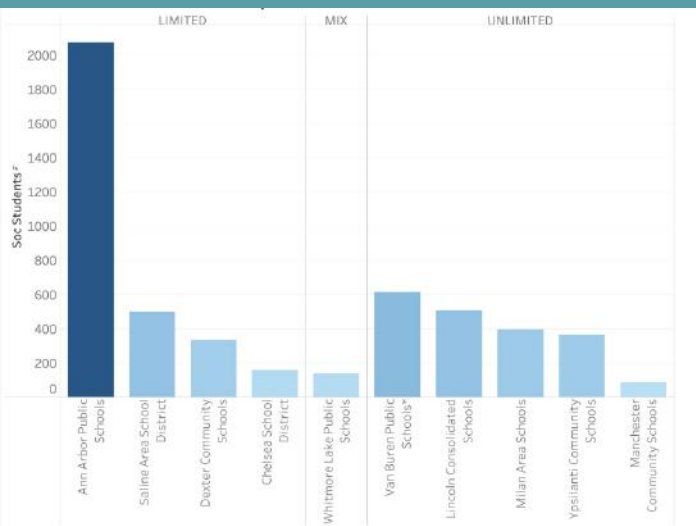
These five cities were selected based on their similarities to Ypsi in **socioeconomic factors, school attendance rates, racial demographics**, and proximity to a major public university in Michigan. This comparability allows for a **comparable analysis of student movement patterns**.

Four of the five citites experienced a **net outflow** of students in the 2023-2024 school year. Pontiac had the highest net loss, followed by Lansing, Kalamazoo, and Wyoming. In relation to these districts, Ypsi schools (YCS, Lincoln & Van Buren) have the third largest net outflow of students: 1,744. Saginaw was the only district with a net gain, enrolling more students than it lost.

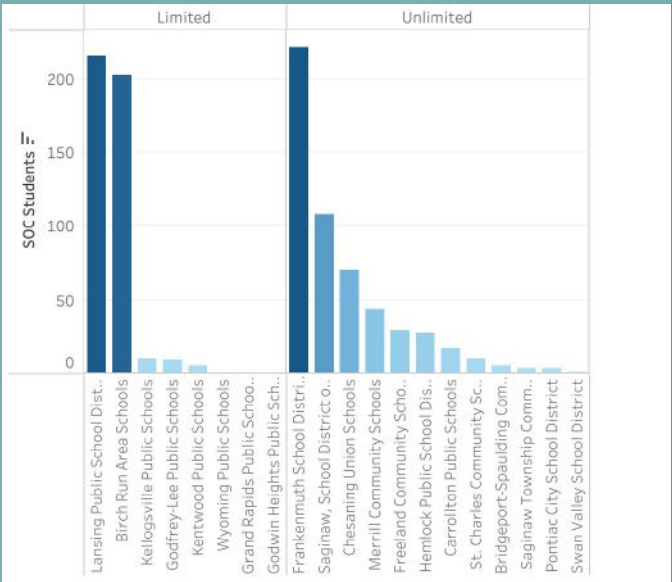
As seen in Ypsilanti, factors such as **school performance**, academic offerings, and **community reputation** may contribute to these trends. Additionally, **public transportation** accessibility and **car ownership rates** may play a role in student movement, affecting families' ability to access schools outside their home district. These cities may also be experiencing challenges similar to Ypsilanti due to the impact of **Schools of Choice (SoC)**, which can exacerbate enrollment declines in certain cities and districts.



Availability of School of Choice Slots on Enrollment



WASHTENAW SCHOOL DISTRICT SOC ENROLLMENT BY SOC SLOT RESTRICTIONS



ACROSS-MI SOC ENROLLMENT BY SLOT RESTRICTIONS

LIMITED VS. UNLIMITED ENROLLMENT

BACKGROUND

Schools determine whether they limit slots for out-of-district students. A school district with a **limited**, predetermined number of slots accepts SOC students by random draw. A school district with an **unlimited** number of slots accepts all out-of-district students who apply and meet academic and disciplinary requirements. Each district's school board determines whether they have a limited or unlimited number of slots every year.

RESULTS

We found **little change in enrollment** for schools with limited versus unlimited seats across Washtenaw ISD and comparable Michigan counties. Ann Arbor Public Schools (AAPS) had the highest enrollment rates across the board, at around 1,500 versus the next-highest at about 600 being Van Buren Public Schools. We suspect AAPS may be an outlier.

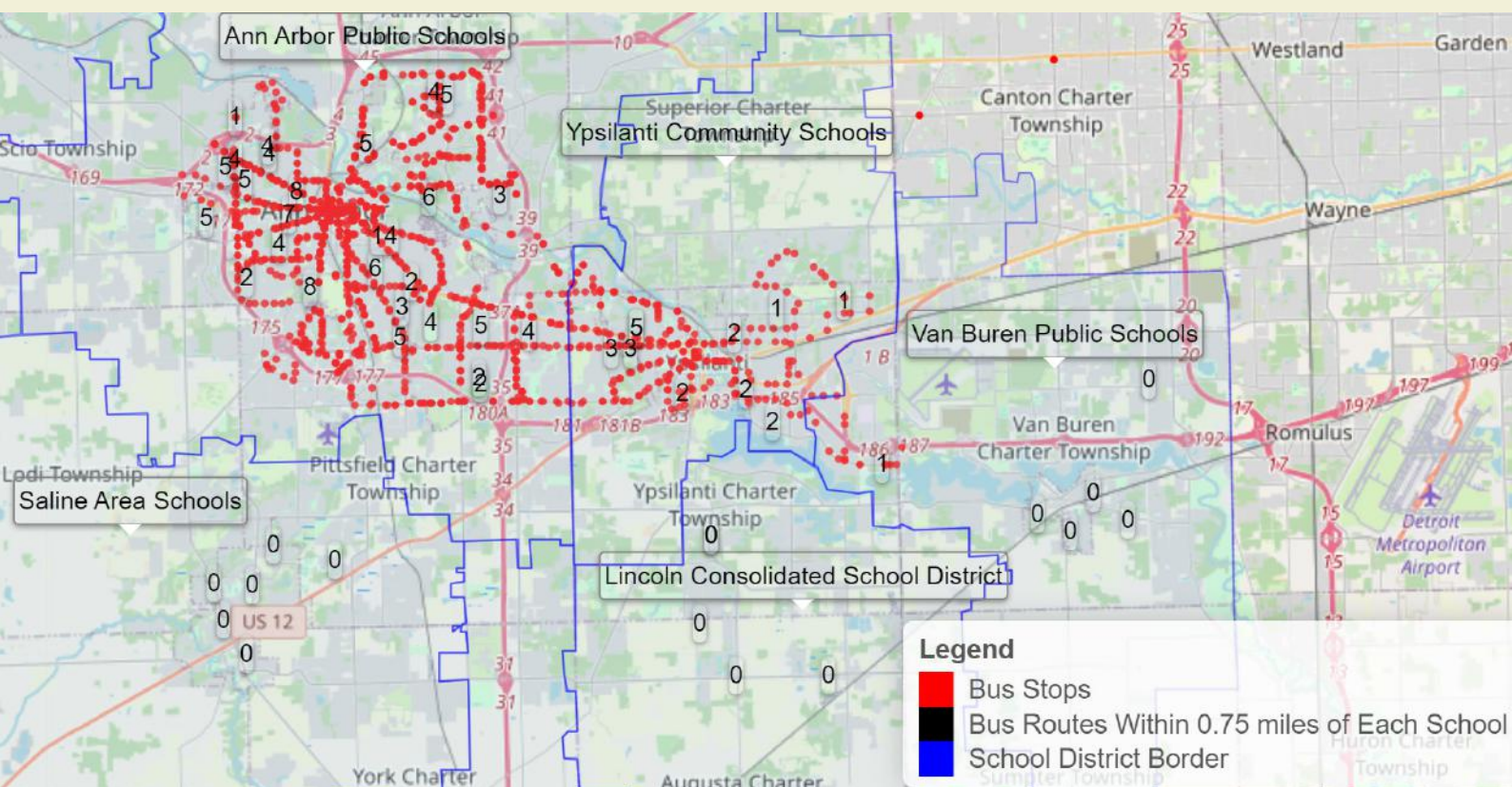
SOURCING

We found this information via each school district's website and/or via Freedom of Information Act requests via each school district. Copies of all fulfilled FOIA requests are available in our appendix.

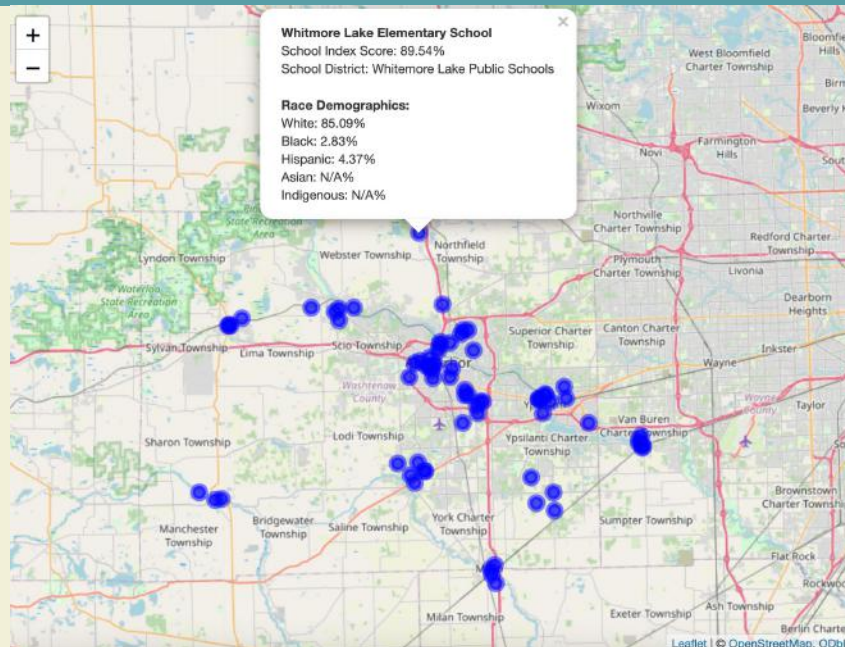
Accessibility Analysis

Greater Ypsilanti Transit Availability

Public transit availability is a **key resource** in successful open enrollement programs for **lower income students**. This map shows local public bus services. Each public school location is assigned a number, which also indicates the number of unique bus routes within 0.75 miles. Here the **lack of transit options** for students in Ypsilanti schools to the very close Van Buren and Lincoln districts is visible, with bus access to only one school between those two districts.



Accessibility in a Broader Context



<https://britmau.github.io/schools-of-choice-maps/>

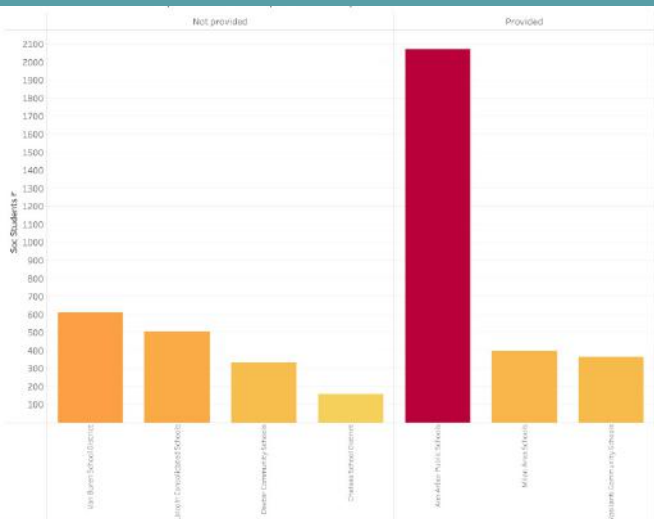
Summary of Key Findings

Research has shown that school of choice has **unintentionally increased segregation**, even when parents aren't factoring race into the schools they're choosing. Although designed to expand access to quality education, school of choice often benefits families with greater resources—such as reliable transportation, flexible schedules, or the ability to navigate complex enrollment systems. Black parents are more likely to prioritize high-performing schools, often at the cost of longer commutes. Meanwhile, white parents also prioritize high-performing schools; however, it appears that they also prioritize short commute times, more experienced teachers, and schools where their children are part of the racial majority in their school selections. These preferences, shaped by structural inequities, reflect a racialized societal pressure in which black families often seek **upward mobility through education** while white families aim to maintain their status.

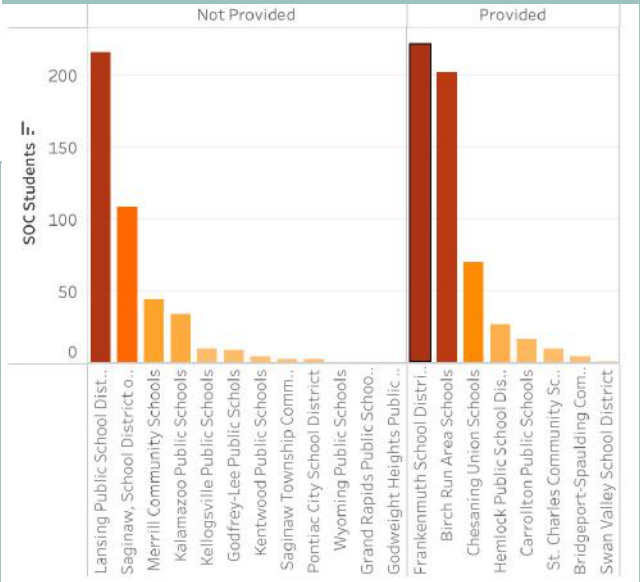
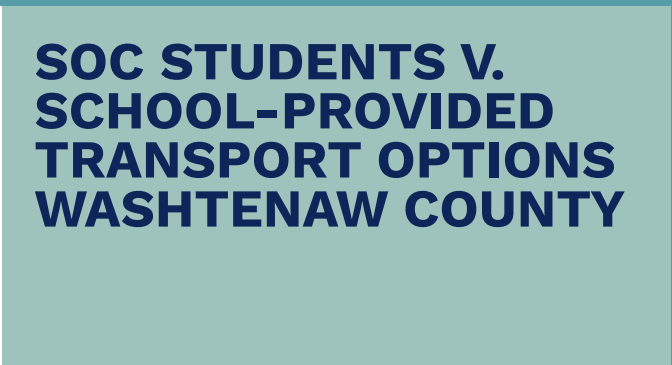
Further research has shown that within the metro-Detroit area, despite school of choice theoretically offering students access to high-performing schools, in practice it is shaped by racial and geographic barriers. Many metro-Detroit school-of-choice students still find themselves in racially segregated, low-performing schools. Studies show that residential segregation persists in shaping who has access to which schools.

The interactive map offers a **visual and data-driven representation** of this phenomenon. By allowing users to click on individual schools within the county to view their graduation rates, student success index scores, and racial demographics, the map **reveals patterns** that might not be immediately obvious. Users can observe how high-performing schools often have lower proportions of Black and Latino students, while schools with higher percentages of students of color frequently struggle with lower performance metrics. These spatial and demographic trends illustrate how parental preferences, geographic boundaries, and systemic inequities work together to **perpetuate racial divides in education**.

School-provided Busing Availability Impact on Student Migration



SOC STUDENTS V. SCHOOL-PROVIDED TRANSPORT OPTIONS MI-WIDE



SCHOOL-PROVIDED BUSING DID NOT CHANGE STUDENT ENROLLMENT

SOURCING RESULTS BACKGROUND

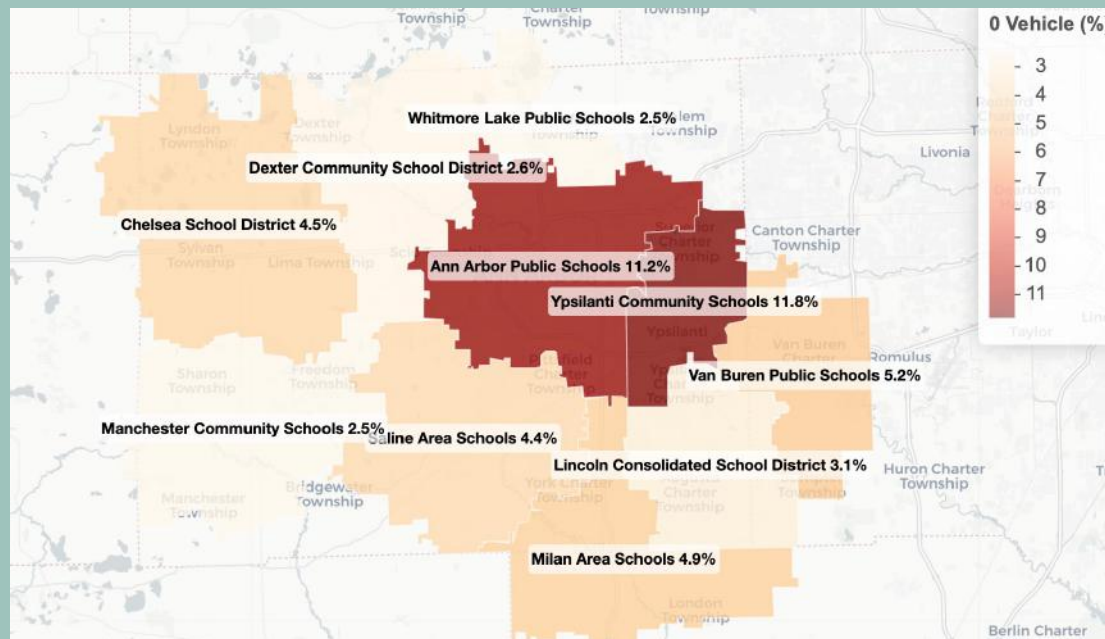
Not all schools that provide student busing options extend that to SOC students. Those offer busing to SOC students require them to use existing routes.

We found **little difference in out-of-district student enrollment** between districts that provide busing versus those that do not. This may be because districts restrict school-provided transportation availability to in-district routes.

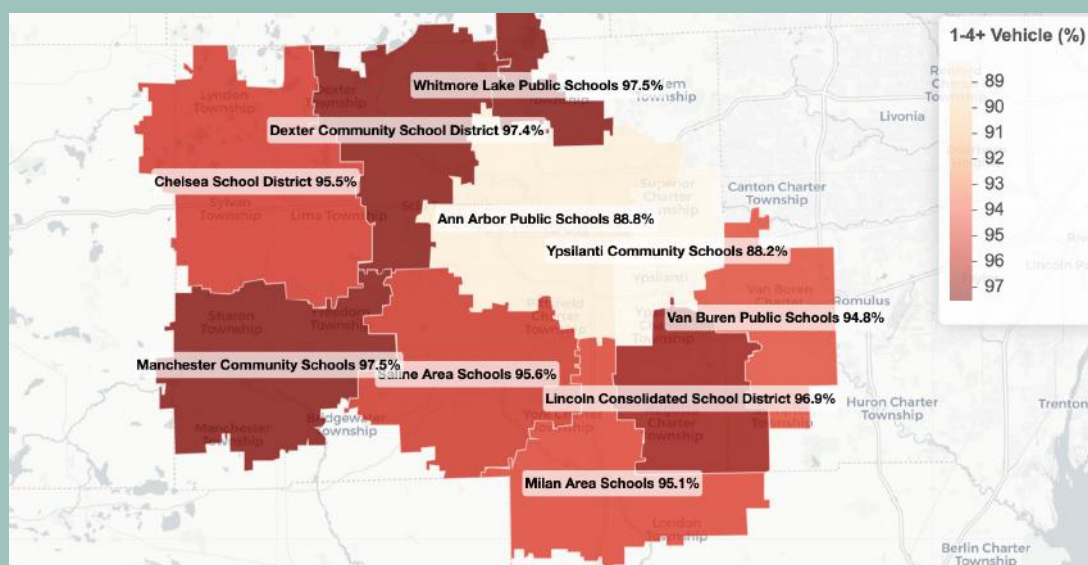
We aquired this data via FOIA requests and publicly available information, and not all districts responded or had this information available. All FOIA requests and answers are available in our appendix.

Car Ownership Rates in Washtenaw County School Districts

ZERO-VEHICLE HOUSEHOLDS ACROSS SCHOOL DISTRICTS



1 TO 4+ VEHICLE HOUSEHOLDS ACROSS SCHOOL DISTRICTS



Vehicle ownership in Washtenaw County varies greatly across school districts. While most suburban and rural districts show vehicle access rates over 95%, urban districts like Ypsilanti and Ann Arbor exhibit significantly higher proportions of zero-vehicle households, raising potential concerns around transportation equity and accessibility for students and families.

Key Findings Summary

1

De Facto Segregation Persists Despite SOC

Districts with a higher concentration of white residents have a higher concentration of white students, scoring higher in measures of student success. Despite studies indicating that **black residents seek to send their kids to higher-scoring schools**, willing to take on burdens like longer commutes and send them out-of-district, in reality these schools remain segregated. In looking at overall enrollment, we find that factors like **public transportation** may generally increase accessibility of schools of choice, but **underlying causes of residential segregation** may play a larger role in these outcomes.

2

AAPS and Van Buren PS Had Highest SOC Enrollment with Similar Factors; Same Across-MI

Ann Arbor Public Schools had **2,073 students enroll not from their school district** even with limited enrollment. Van Buren Public Schools had **611 school of choice students with unlimited enrollment**. AAPS provided **transportation to out-of-district students** and has a robust public transit system; Van Buren had none of these factors. Across Michigan, 4 out of 5 comparable cities had net outflow, and there was little difference in SOC inflow based on car and school-provided bus availability.

3

Car Availability May Impact Enrollment

For all districts in Washtenaw County, over **88 percent of households had access to 1 or more car**. Of the Washtenaw Intermediate School District, **Ypsilanti Community Schools had the highest percent of households without a car at almost 12 percent**, and the highest number of outbound students, with over 1,500 students enrolling elsewhere. Ann Arbor Public Schools had the second-highest percent of households without cars, and one of the lowest number of outbound students, with 364 students enrolling elsewhere. In the next impact, we look at other factors that may explain this difference.

4

Public transportation options may contribute to higher enrollment

Ann Arbor public schools had a high concentration of **public transit bus stops**, especially near schools. The AAPS school district had the second highest percentage of households without a car. Neighboring district **Ypsilanti Community Schools had the highest lack of car ownership** per household, and similarly dense public transit makeup. Public transit options may contribute to the high influx of SOC students into AAPS from neighboring districts like Ypsi, especially considering the **higher lack of car availability**.

School Funding and Socioeconomic Impact



Executive Summary

This portion of the project seeks to identify the **strongest determinants of educational quality and equity**, measured by English and Math proficiency, high school graduation and dropout rates, and college enrollment. While initial analysis considered a range of economic, social, and demographic variables, **socio-economic factors showed only limited statistical significance** and cannot be confirmed as key predictors. Variables such as local unemployment, SNAP participation, child poverty, chronic absenteeism, commute mode, citizenship status, and race had minimal impact. In contrast to intuitive thought, **school-specific financial factors—like per-student funding and instructional expenditures—did not show a meaningful relationship** with educational outcomes. These findings suggest that simply increasing funding is unlikely to improve student success and that the drivers of educational quality and equity may exist in students' and their families' socioeconomic status

Within the Ypsilanti area, Ypsilanti Community Schools (YCS) consistently lags behind Lincoln Consolidated School District and Van Buren Public Schools in the key metrics of educational quality and success.

Key Research Questions

Q1

How do **funding differences** affect educational quality and equity in the greater Ypsilanti region?

Q2

What are the key **predictors of student success** (English & Math proficiency, graduation rates, dropout rates, college enrollment rates)?

Q3

How does **funding and educational quality vary** across the greater Ypsilanti region?

Q4

How do Ypsilanti area schools vary in **social, economic, and demographic dimensions**?

Data and Methodology

How do socioeconomic factors and funding impact school success?

Data

Michigan Schools Data

The State of Michigan compiles annual data on school districts and buildings, including **social, economic, and success data**. From this database, we obtained:

- **Transportation Methods**
- Household Income and Size
- Public Assistance Usership and healthcare covership
- Race and Place of Birth
- **School Quality and Student Success Index (SQSSI)**
- Labor Force Participation, Unemployment, and Poverty Rates
- Percentage of Households with Two Parents in the Workforce

National Center for Educational Statistics

The U.S. Department of Education compiles annual data on school districts and their surrounding cities, including demographic and district-specific funding. From this database we obtained:

- **School Financials**
- Number of Schools in a District Student Population

Methods

With this data, we conducted a multi-variate regression analysis to statistically examine relationships between the our chosen school success metrics and the variables that socially and economically comprise school districts. We also **complimented our analysis with descriptive figures** to visualize key aspects of school qualities.

Literature Review

1

Contextualizing Regression Results to Economic and Education Policy Literature

A study published in the Journal of Advances in Educational Research and Evaluation similarly found that **per-pupil spending is not a significant determinant of school success**. Scores in Reading, English Language Arts, Math, Social Studies, and Science were not significantly influenced by the amount of funding a school received per student (Ames, Ames, and Angioloni). Instead, **local poverty rates** and **student-teacher ratios** were negatively correlated with academic performance, while **school size** and **teacher experience** showed positive correlations. These findings suggest that directing resources toward reducing class sizes and hiring more experienced teachers may be a more cost-effective strategy than increasing per-pupil spending, at least in the short term.

2

Other Significant Predictors

High rates of **chronic absenteeism** were a very strong predictor (in the literature and in our regressions) of poor academic outcomes. Conversely, **high engagement with the school environment** (a factor in the literature, but not our analysis) was highly associated with better graduation rates, college attendance rates, and standardized test scores.

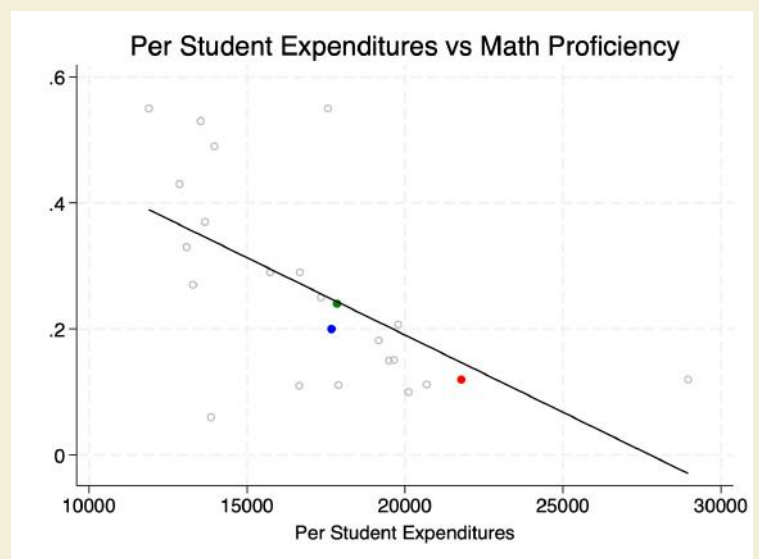
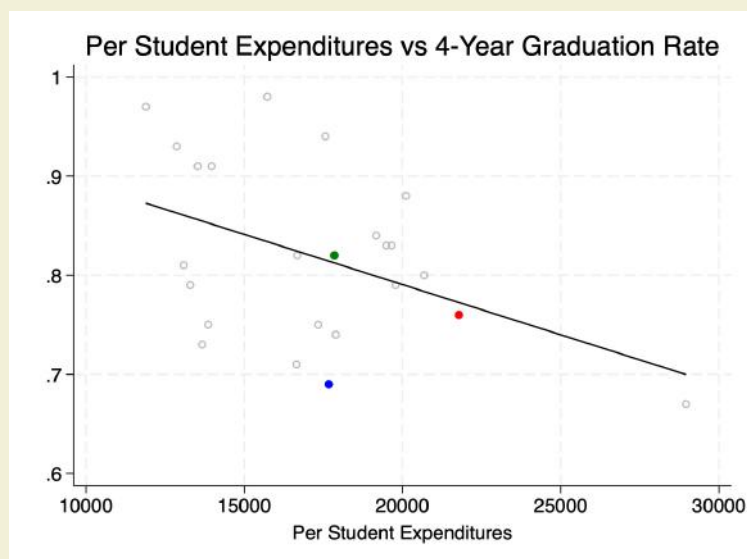
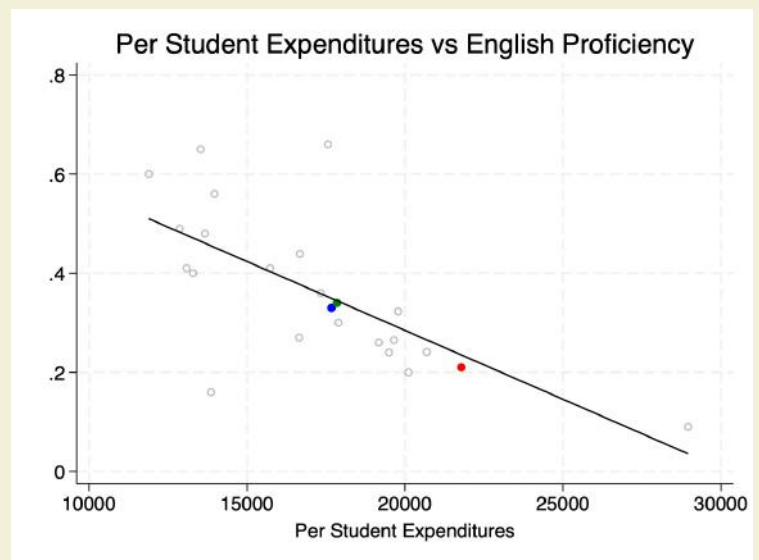
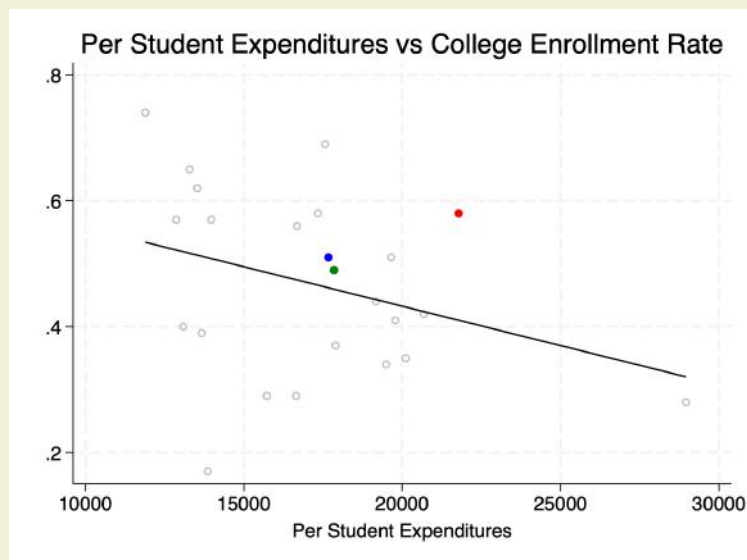
3

Actionable Goals for Schools

One affordable way for schools to increase academic performance is by **ensuring that kids come to school and remain engaged with their work** there. Chronic absenteeism also has spillover effects—that is, students in classes where a higher percentage of their classmates are chronically absent also suffer academically. Encouraging attendance and engagement has much stronger, more positive effects on short-term academic outcomes than does additional funding.

Key Finding: Money Does Not Drive Success

Negative correlations between school funding and student success indicators



- Ypsilanti Community Schools
- Lincoln Consolidated Schools
- Van Buren Public Schools
- Other Districts
- Linear Fit

School District Funding

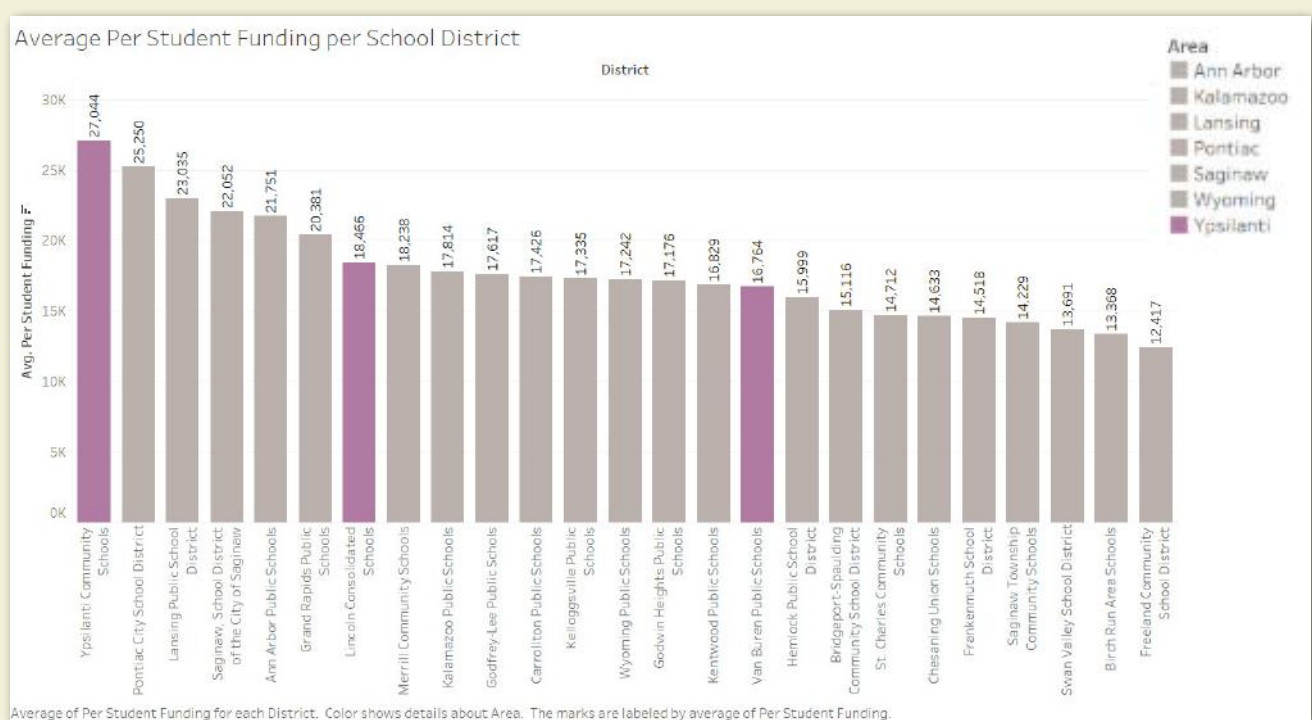


Figure 1. Average Per Student Funding per School District

This chart depicts the average per student funding for each of the school districts that we analyzed in our project, sorted from **largest to smallest**. Ypsilanti-area school districts are highlighted in purple.

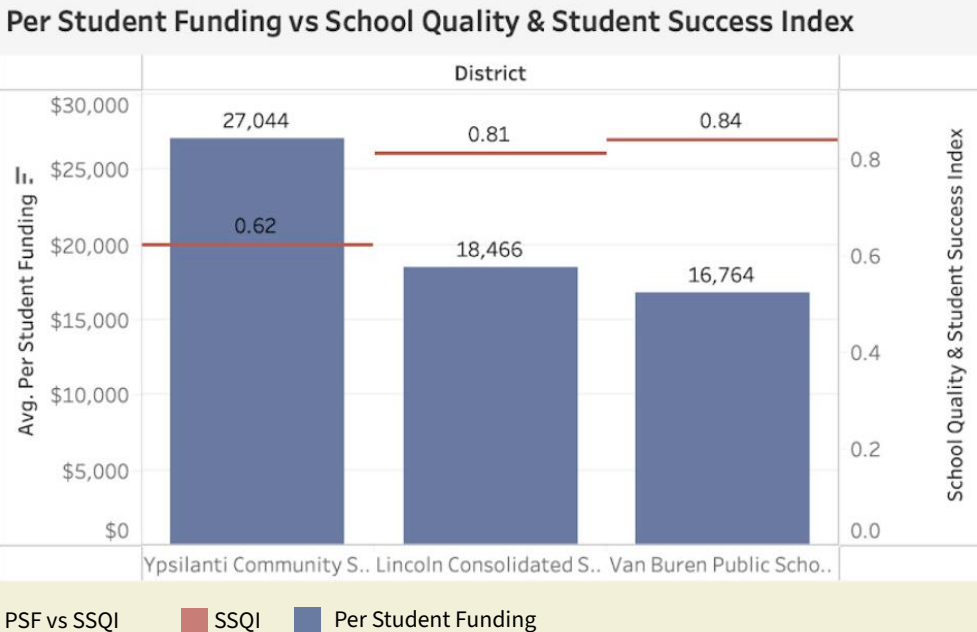
Key Takeaways

Ypsilanti Community Schools has the highest average per student funding of all schools we examined at slightly over \$27,000 per student. Lincoln Consolidated and Van Buren sit near the median of the dataset at roughly \$18,500 and \$16,800 per student, respectively. As a whole, **per student funding is higher in Ypsilanti** compared to similar cities.

Impact on Students

Figure 2. Per Student Funding vs School Quality & Student Success Index (SQSSI)

This chart displays per student funding (blue) against SQSSI scores (red line) for Ypsilanti-area schools.

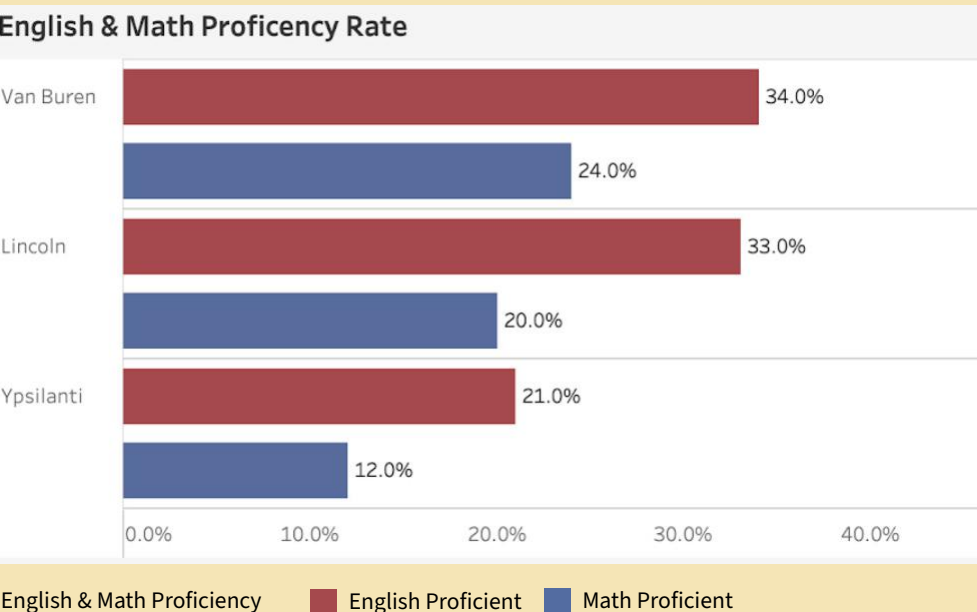


Key Takeaways

There is a negative correlation between student funding and SQSSI scores for Ypsilanti-area schools, school districts with more **per student funding**, such as YCS, actually have the **lowest SQSSI score**, and vice versa.

Figure 3. English & Math Proficiency Rate

This chart displays the English (red) and Math (blue) proficiency rate for the 3 Ypsilanti-area school districts.



Key Takeaways

In Van Buren and Lincoln, roughly 1/3 of students are proficient in English. This number is **significantly smaller at YCS**, at only around 21%. Similarly, Van Buren and Lincoln have significantly higher math proficiency rates, with **YCS lagging at only 12%**.

Educational Outcomes

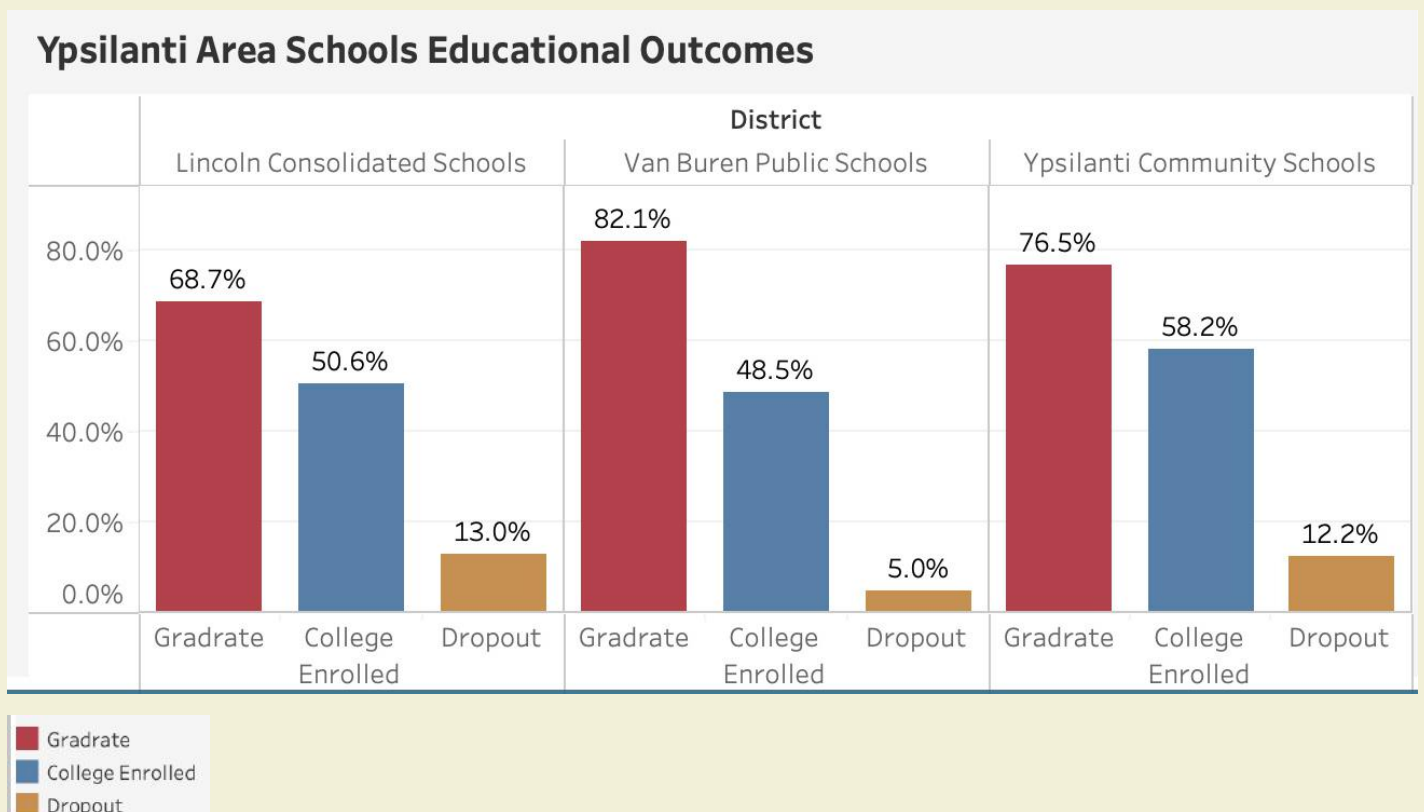


Figure 4. Average Educational Outcomes for Ypsilanti-Area Schools

This chart shows the average 4-year graduation rate (red), college enrollment rate (blue), and dropout rate (orange) for Lincoln Consolidated Schools, Van Buren Public Schools, and Ypsilanti Community Schools.

Key Takeaways

Ypsilanti Community Schools has the highest average rate of college enrollment, alongside a notable average dropout rate among its students. In contrast, **Van Buren Public Schools achieves the highest four-year graduation rate**, while Lincoln holds the distinction of having the graduation lowest rate.

Key Findings Summary

1

Higher per student funding was found to be **correlated with worse educational outcomes** for all our tested variables (English and math proficiency, graduation rate, and college enrollment rate). This doesn't mean that funding causes poor outcomes, but suggests that **increasing funding is not a panacea** to educational quality and equity.

2

Although there are **no conclusive predictors** of educational quality and equity, some predictors stood out that may suggest an influence of socioeconomic conditions. These predictors include chronic absenteeism, child poverty rates, SNAP participation, and unemployment rates, commute mode, citizenship status, and race (Black, Hispanic, or White).

3

Ypsilanti Community Schools has the **highest average per student funding** out of the three districts that serve the Ypsi area. Despite having the most funding, YCS has **the lowest School Quality and Student Success Index score**.

4

Ypsilanti Community Schools lags **consistently behind** Lincoln Consolidated Schools District and Van Buren Public Schools in English and Math proficiency and graduation rate. It does **outperform on college enrollment rates**, though this is an outlier for a school with high per student funding (which, as displayed on pg 28, typically do worse on college enrollment).

School Disciplinary Inequalities

A decorative wavy line in a lighter shade of orange, starting from the left edge, curving upwards and then downwards, and ending at the right edge, positioned behind the title text.

About the Project

Executive Summary

This report explores **disciplinary disparities** across public schools in and around Ypsilanti, Michigan, with a particular focus on how **race** and school enrollment pathways—specifically **School of Choice** programs—may influence discipline outcomes. Our team investigated whether Black students and School of Choice attendees experience higher rates of suspensions and expulsions, and we explored how other community factors such as income levels, disability status, and neighborhood conditions may contribute to these patterns.

Using publicly available data, we found evidence of disparities in disciplinary action rates across districts and schools. Most notably, our analysis revealed a statistically significant, though modest, relationship between the percentage of Black students in a school and its expulsion rate. The findings point to potential systemic inequities in how school discipline is applied, raising important questions for local educators, policymakers, and community members.

Introduction

Public school discipline practices in Michigan have long reflected broader **racial and socioeconomic inequalities**. Even after legislative reforms, such as Michigan's 2017 Rethink Discipline bills, many schools continue to rely heavily on **exclusionary practices** like suspensions and expulsions—practices that disproportionately affect students of color, students with disabilities, and those from lower-income households.

Our project focuses on public schools in and around Ypsilanti, a community facing both economic and educational challenges. This includes examining local districts such as Ypsilanti Community Schools, Lincoln Consolidated Schools, and Van Buren Public Schools, with comparisons to districts across the state known for similar demographic profiles and discipline rates (e.g., Lansing, Saginaw, Pontiac).

We ask: Are **Black students** and **School of Choice participants** more likely to face expulsion? And are these outcomes tied to broader patterns in race, disability, income, or school policy?

Key Research Questions

Q1

Are there significant differences in **discipline rates** among schools in the Ypsilanti area?

Q2

What is the relationship between **discipline rates** and **percentage of Black students** per school district?

Q3

What is the relationship between **discipline rates** and the amount of **School of Choice attendees** at each school district?

Q4

How do broader community factors—such as **income levels**, disability status, or staff diversity—correlate with **discipline patterns**?

Literature Review Summary

[Literature Review](#)

The Role of Policy in Disciplinary Inequities

Michigan has a long history of using harsh discipline policies, including **zero-tolerance rules** that often lead to suspensions or expulsions for minor misbehaviors. Although the 2017 “Rethink Discipline” reforms were designed to reduce exclusionary discipline and require schools to consider a student’s background (such as age or disability), enforcement has been weak. Many schools continue to apply punishment without following these guidelines, especially in districts serving vulnerable populations.

Race, Disability, and Subjectivity in Discipline

Data shows that **Black students are over four times more likely to be suspended** than white students in Michigan. These disparities are **not explained by behavior alone**. Instead, Black students are often disciplined for subjective infractions like “disrespect,” whereas white students face punishment more often for clearly defined issues. Students with disabilities are also disproportionately impacted—suspended at twice the rate of their peers. These patterns point to systemic bias in how behavior is perceived and punished.

Social and Structural Factors

Discipline outcomes are closely tied to broader community stressors. Students from **low-income households** or single-parent homes often face challenges like food insecurity or housing instability, which can affect behavior in school. Schools in **high-crime neighborhoods** may also adopt stricter discipline policies out of perceived need, which can further disadvantage students who already experience trauma or instability. Still, racial disparities remain even among students from similar socioeconomic backgrounds, suggesting deeper issues beyond poverty alone.

What Works: Toward More Equitable Approaches

Promising strategies like **Restorative Justice (RJ)** and **Positive Behavioral Interventions and Supports (PBIS)** have shown success in Michigan schools, particularly when implemented with attention to race and culture. RJ emphasizes healing and dialogue over punishment, while PBIS teaches and reinforces positive behaviors. However, these approaches only work when supported by leadership, proper training, and community engagement. Schools that invest in staff diversity, bias training, and relationship-building have seen both academic improvements and reduced disparities in discipline.

Disciplinary Inequality: Methods & Analyses

Data Sets Used

We gathered data from a range of publicly available and reliable sources:

- MI School Data (MISchoolData.org)
 - **Disciplinary incident counts**, School of Choice enrollment, staff demographics, and students with disabilities
- National Center for Education Statistics (NCES)
 - **Racial and demographic breakdowns** for each school
- U.S. Census Bureau
 - **Income and housing characteristic statistics** for school district communities

Variables of Interest

- **Disciplinary Actions:** Total number of suspensions and expulsions
 - Note: Schools reporting fewer than 10 incidents are reported as “<10” in the data; we recorded these as 10 to allow for analysis
 - Note: Suspensions include in-school suspensions
- **Percentage of Black Students**
- **Percentage of School of Choice Students**
- Percentage of Students with Disabilities (SWD)
- Median Household Income (by district)
- Local Crime Rates

Analyses

1. Visualization of Trends

- Created side-by-side bar charts and scatterplots to compare discipline rates across schools and districts
- Plotted discipline rates against % Black students and % School of Choice students to look for visible patterns

2. Regression Analysis

Ran a **linear regression** to examine the relationship between % Black students and discipline rate

3. Exploratory Comparisons

- Compared expulsion data across time (2017–2018 to 2023–2024)
- Conducted **district-level comparisons** (e.g., Ypsilanti vs. Lincoln vs. Van Buren)
- Investigated potential links between various variables

Q1. Changes in Disciplinary Rates

Comparing Disciplinary Rates Across Time

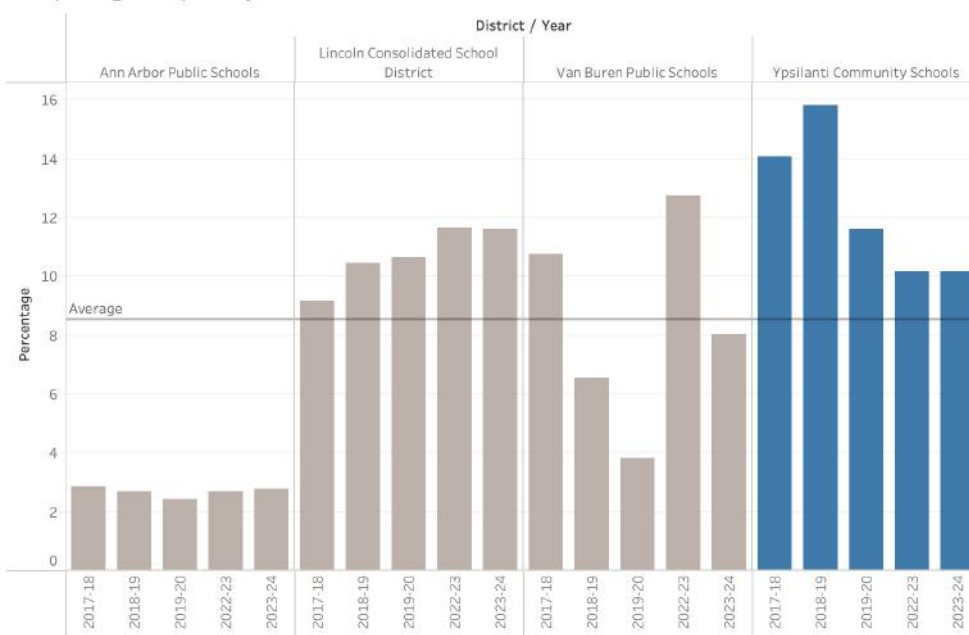


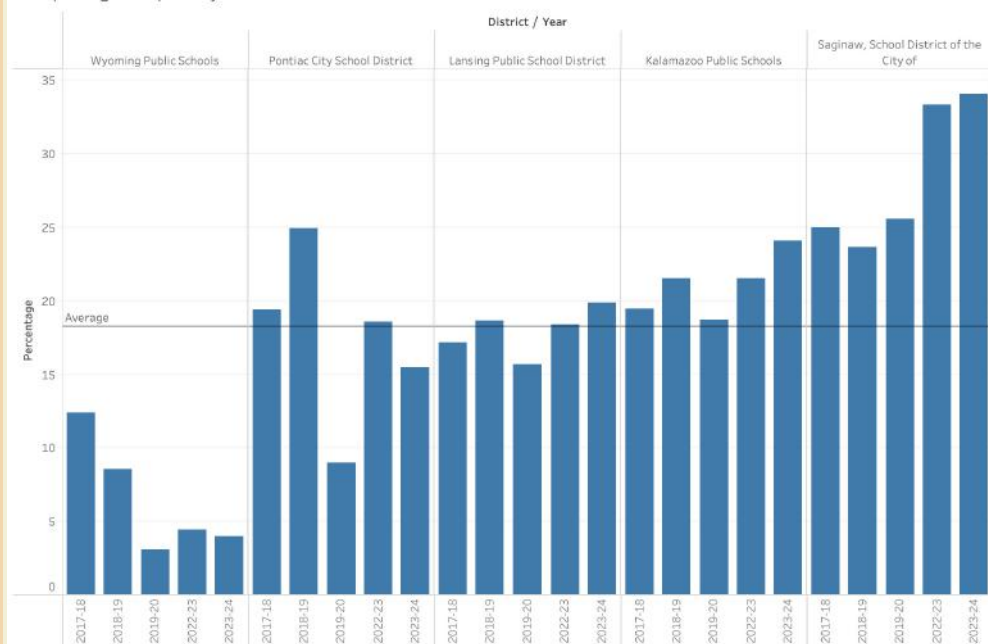
Figure 1. Disciplinary Rates Across Time for Ypsilanti, Van Buren, Lincoln, and Ann Arbor Schools

- Reference line is the average across the 4 listed schools.
- 2020 and 2021 school years were removed due to pandemic outliers.

Figure 2. Disciplinary Rates Across Time for Comparable Schools to Ypsilanti

- Reference line is the average across the 5 listed schools.
- 2020 and 2021 school years were removed due to pandemic outliers.

Comparing Disciplinary Rates Across Time



Main Takeaways

- **Ypsilanti has higher than average disciplinary rates.**
- **Ypsilanti disciplinary rates have reduced over time.**
- Comparable schools have higher disciplinary rates on average than Ypsilanti schools.

Q2. Disciplinary Disparities Visualization

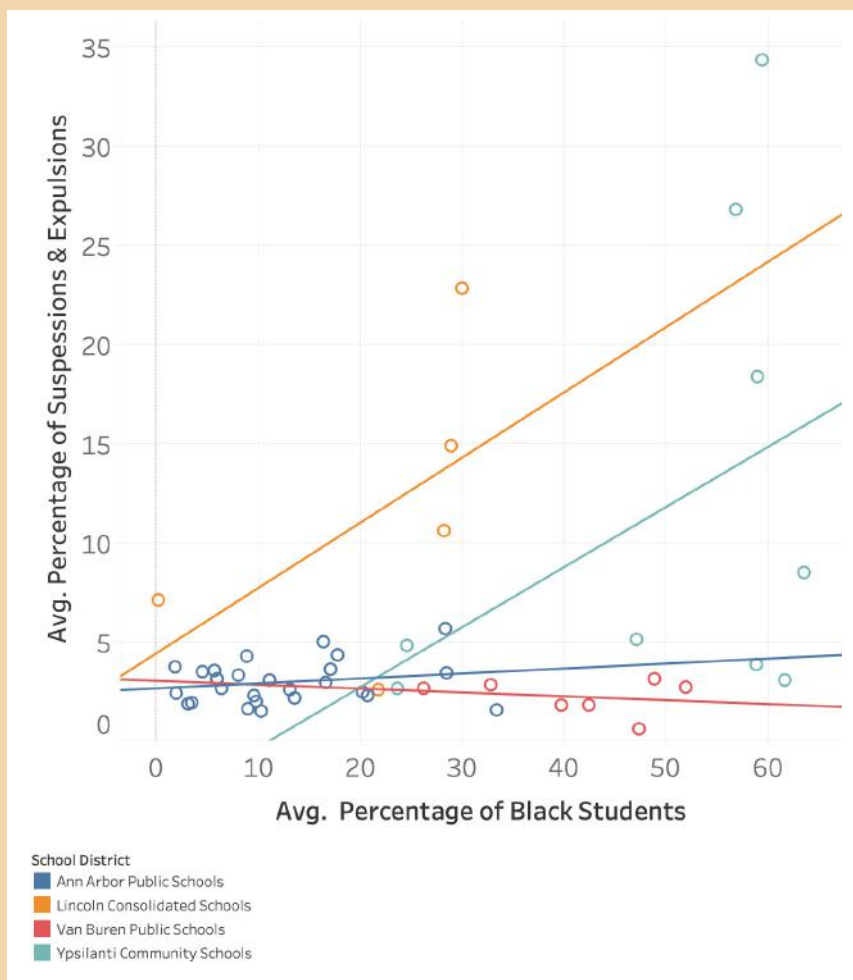


Figure 3: Percentage of Black Students on Disciplinary Rate

- Points represent individual schools
- Colors represent distinct school districts
- Note: <10 = 10 (suspensions/expulsions)
- Sources: NCES, MISchoolData.org, Center for Educational Performance and Information

For Ann Arbor Public Schools, Lincoln Consolidated Schools, and Ypsilanti Community Schools, as **percentage of black students increases, the disciplinary rate also increases.**

However, the relationship differs across school district

Lincoln & Ypsilanti schools have **greater positive slopes**, meaning that the correlation between percentage of black students and disciplinary rates may be stronger in those districts

Q2. Disciplinary Disparities Analysis

Goal

A question posed to our group was: Are there significant differences in discipline rates among schools for Black students? To answer the research, our group decided to run a **regression analysis**. The goal of the regression analysis is to understand whether or not there is a relationship between disciplinary rates and the proportion of minority students.

The regression used the **percentage of expulsions**, based on student population, and the proportion of four minority groups: Asian, Black, Hispanic, and individuals who identified as two or more races. Further information about other minority groups can be found in the appendix. A regression analysis was run for each school district. Each school district comprised data from each reporting school. Additionally, we wanted to see if schools that had an above average expulsion rate also had higher proportions of black students in the respective school's population. The model was significant with a p-value < **0.05(.007)**.

Summary of Key Findings

In “Ypsi” schools(Ypsilanti, Lincoln Consolidated, Van Buren, Ann Arbor), there is a **slight positive correlation between the proportion of black students and expulsions**. When expulsions rise, so does the proportion of black students. Across the five chosen comparative school districts, the results are relatively consistent with our findings from “Ypsi” schools., with only one schools district having a negative correlation(Wyoming). 27% of the variation in the results is explained by the regression.

For “Ypsi” schools, the average expulsion rate is 5.48%. Every school with an average expulsion rate has higher than 28% Black students, with the exception of one school.. The average across “Ypsi” schools is 25%.

Our group has concluded that there could be possibilities of disparities in discipline rates amongst minority students across “Ypsi” and other Michigan schools. Black students could be facing unfair discipline across schools. However, It is difficult to come to a certain conclusion about the reasons behind the possible discipline disparities, as the variation is low in the models, signifying that the results could be due to different factors. Our group believes further work and research are required to ascertain whether or not the results are due to disparities in discipline policy

Q3. School of Choice x Discipline Analysis

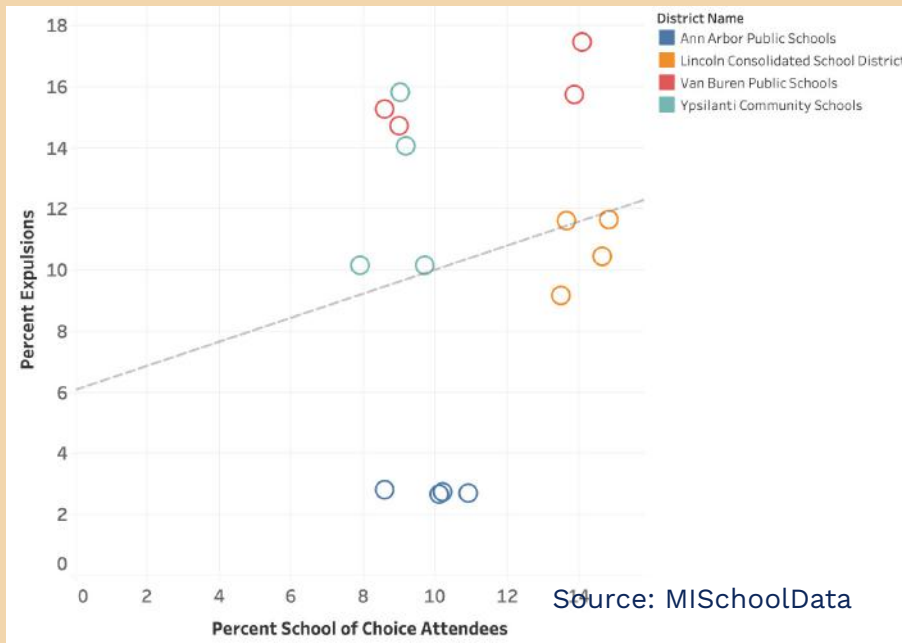
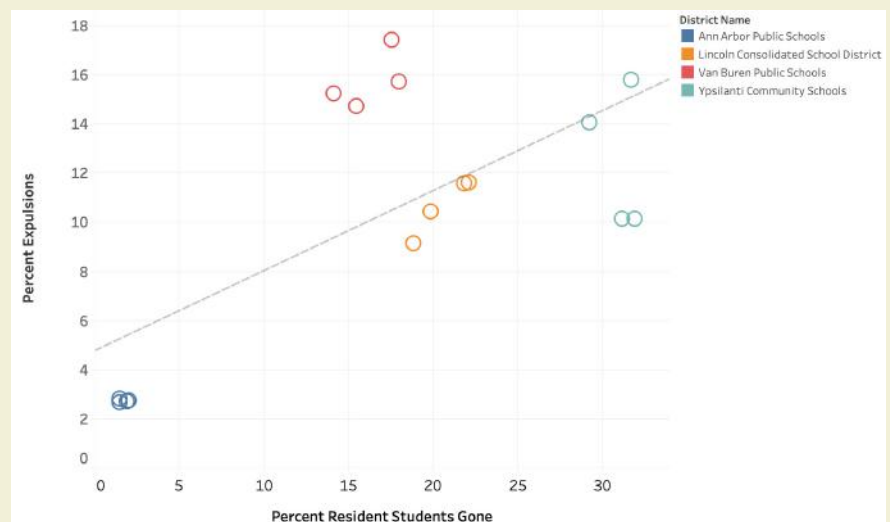


Figure 4. Percent School of Choice Attendees vs. Percent Expulsions

- Each point is a different year (2017, 2018, 2022, or 2023)
- The trend line has a slope of **0.39**, indicating that rates of expulsions become slightly higher with more SOC students, but the result is **not statistically significant** enough to draw a conclusion

Figure 5. Percent Resident Students Enrolled Elsewhere vs. Percent Expulsions

- **Formula:** Percent Resident Students Gone = (Students enrolled elsewhere)/((Total students - School of choice students) + Students enrolled elsewhere)
- The slope of the trend line is positive with a value of **0.32**, indicating that rates of expulsions become slightly higher for each percent increase in students that have left the district, this result is statistically **significant (p = 0.003)**, indicating further analysis would be useful

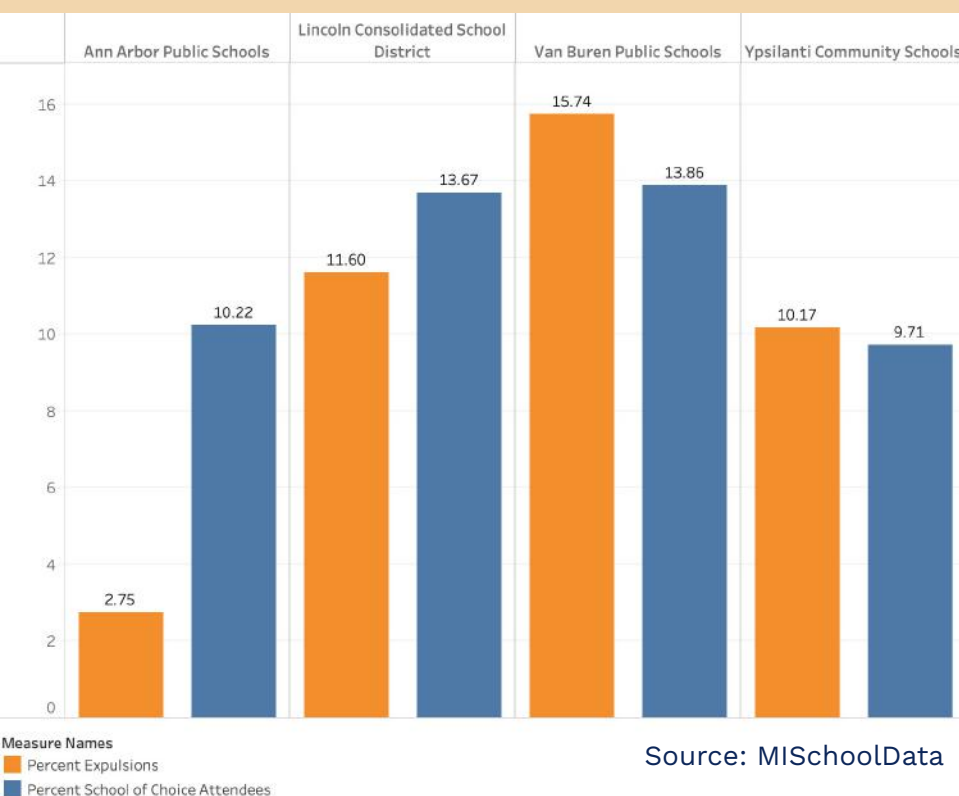
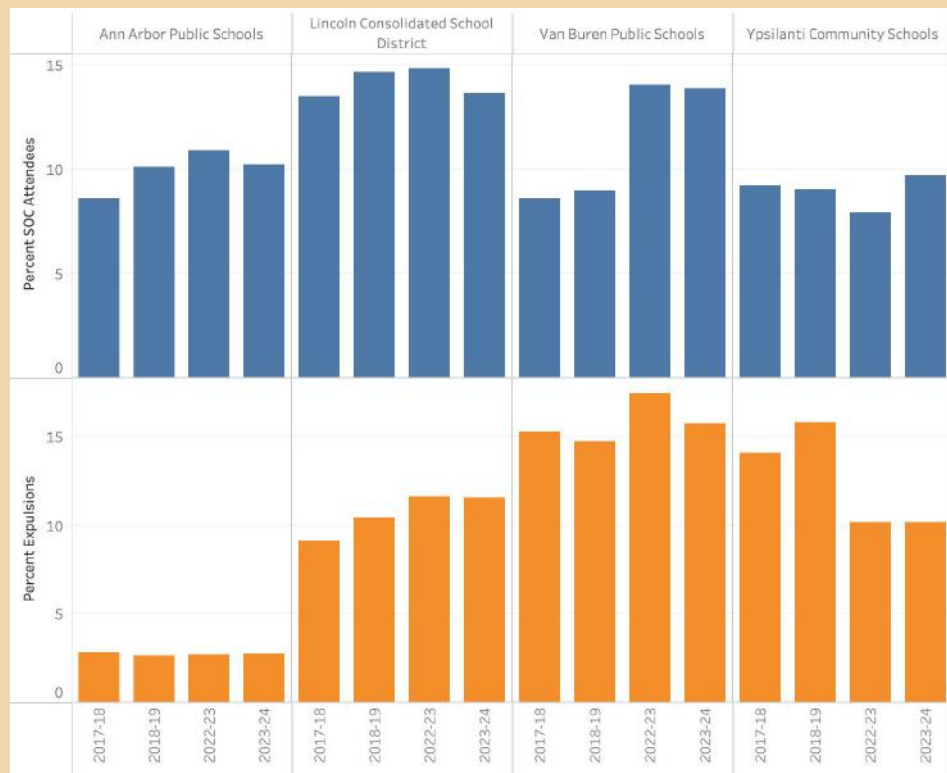


Source: MISchoolData

Q3. School of Choice x Discipline Analysis

Figure 6. Percent School of Choice Attendees and Percent Expulsions over time

- Includes school years 2017, 2018, 2022, 2023
- **Ann Arbor displays the lowest rates of expulsions** while Buren displays the highest
- Ann Arbor also displays **lower percents of School of Choice students**



Source: MISchoolData

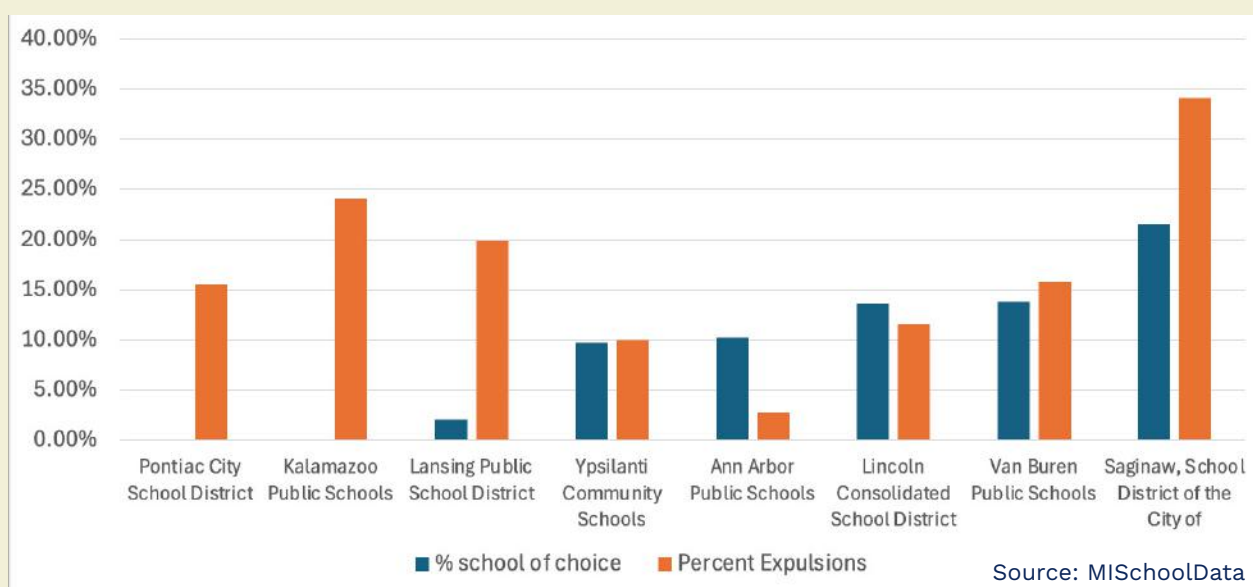
Figure 7. Percent School of Choice Attendees and Percent Expulsions (2023-2024)

- Only for the 2023- 2024 school year
- **Ann Arbor displays a lower percent of School of Choice students and a lower rate of expulsion**
- YCS is in a similar range of SOC students compared to Ann Arbor, but with a higher rate of expulsions

Q3. School of Choice x Discipline Analysis

Figure 8. Percent School of Choice Attendees and Percent Expulsions (2023-2024)

- Displays the same data as Fig. 7, with additional comparable districts
- Several Districts have **low percents of school of choice students** with some of the **highest rates of expulsions**



Summary of Key Findings

In Ypsilanti Township schools (Ypsilanti, Lincoln Consolidated, Van Buren, Ann Arbor), there is a **slight positive correlation** between the percent of School of Choice students and expulsions. This correlation is **not statistically significant**. However, there is a **significant positive correlation** between the percent of students who have left a district and the rate of expulsions. This suggests that schools with higher percentages of students who have left to attend other districts also have higher rates of expulsions.

Overall, Ann Arbor Public Schools have the lowest rates of expulsions and some of the lowest percentages of School of Choice students. However, they have some of the highest total numbers of students from other districts attending. In other comparable districts, there are districts with little to no School of Choice students, and high rates of expulsion, which contradicts the positive correlation that more School of Choice students relates to more expulsions. This does support the idea that this factor may not be significant enough to draw a conclusion.

While our group cannot determine a conclusion on a strong relationship between the percent of School of Choice students and expulsions, there is possibly a relationship between how many students have left a district to be SOC attendees elsewhere and expulsions. It would be useful to also look further into the reasons students may be leaving their resident district, such as **funding**, lack of **college prep courses**, or **teacher to student ratios**.

Q4. Broader Community Factors

Goal

Limited demographic data on students facing disciplinary action makes it difficult to understand their environments and backgrounds holistically. However, broader community factors can offer insight into conditions that may contribute to student behavior and discipline. The selected factors include: **district-level median household income, student disability rates**, rent burden, and student-to-teacher ratios.

Median household income and **rent burden** (defined as spending 30% or more of income on housing) serve as economic indicators of potential hardship. For rent burden, schools were sorted by cities due to area constraints of US Census Data. **Disability rates help examine whether students with disabilities face disproportionate discipline**, potentially signaling discrimination. Student-to-teacher ratios explore whether increased teacher capacity and connection influence disciplinary outcomes. Together, these factors provide a broader understanding of the stressors students may face beyond the classroom.

Summary of Key Findings

Median Household Income: The analysis suggests that areas with higher median household incomes tend to have **slightly lower rates** of the outcome being studied (such as disciplinary actions), though the effect is very small. Overall, income explains about a third of the differences seen in the data, but the connection is not especially strong or certain.

Student-to-Teacher Ratio: The analysis shows that **districts with higher student-to-teacher ratios** — meaning larger class sizes — tend to have higher rates of the outcome being studied (such as disciplinary actions). While class size explains about 32% of the differences seen in the data, the connection is fairly weak and only somewhat statistically significant.

Rent Burden: The analysis suggests that areas with higher rent burden — where people spend a larger share of their income on housing — may see a **slight increase** in the outcome being studied (such as disciplinary actions). However, this relationship is very weak and **not statistically significant**, meaning rent burden doesn't appear to strongly explain differences in the data.

There is a **negative correlation between SOC students with disabilities and expulsions**, as schools with higher expulsion rates tend to have a lower percentage of SOC students with disabilities.

(We targeted students who are both students with disabilities & school of choice attendees, as we want to specifically learn patterns within the SOC population.)

For "Ypsi" schools, average % SOC students with disabilities is higher than other schools (1.42% > 0.31%), which may imply that those schools are more accessible and offer more supportive discipline environment.

Students with Disabilities

(Wyoming Public School District is excluded due to insufficient number of SOC attendees.)

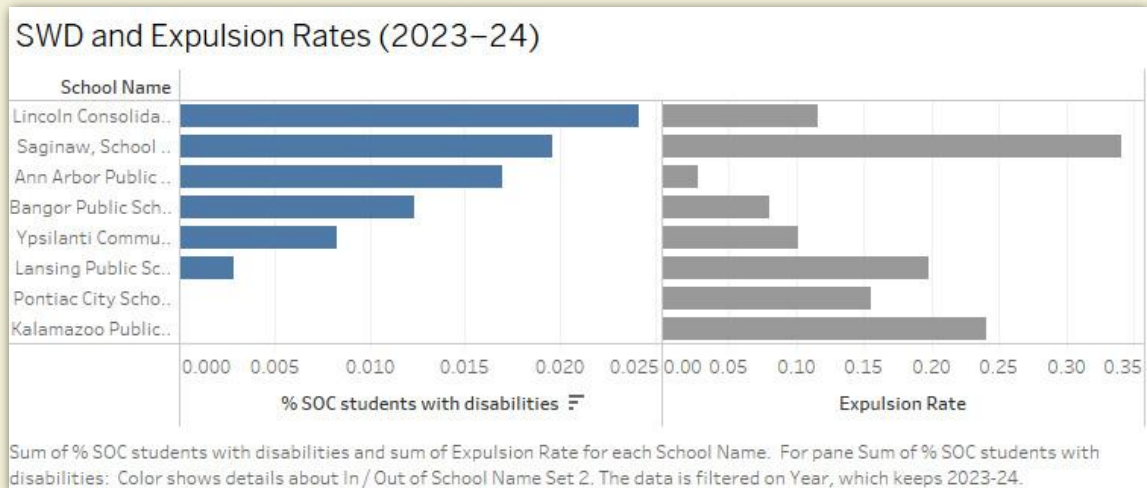


Figure 9. SWD and Expulsion Rates (2023-24)

Lincoln Consolidated Schools have the highest percentage of SOC students with disabilities, while both Pontiac City School District and Kalamazoo Public Schools have 0%. Overall schools with **higher percentages of SOC students with disabilities** tend to have **lower expulsion rates**. One exception is Saginaw Public Schools which has both a high disability percentage and the highest expulsion rate, and Ann Arbor Public Schools has the lowest expulsion rate.

Figure 10. Correlation Between % of SOC Students with Disabilities and Expulsion Rate

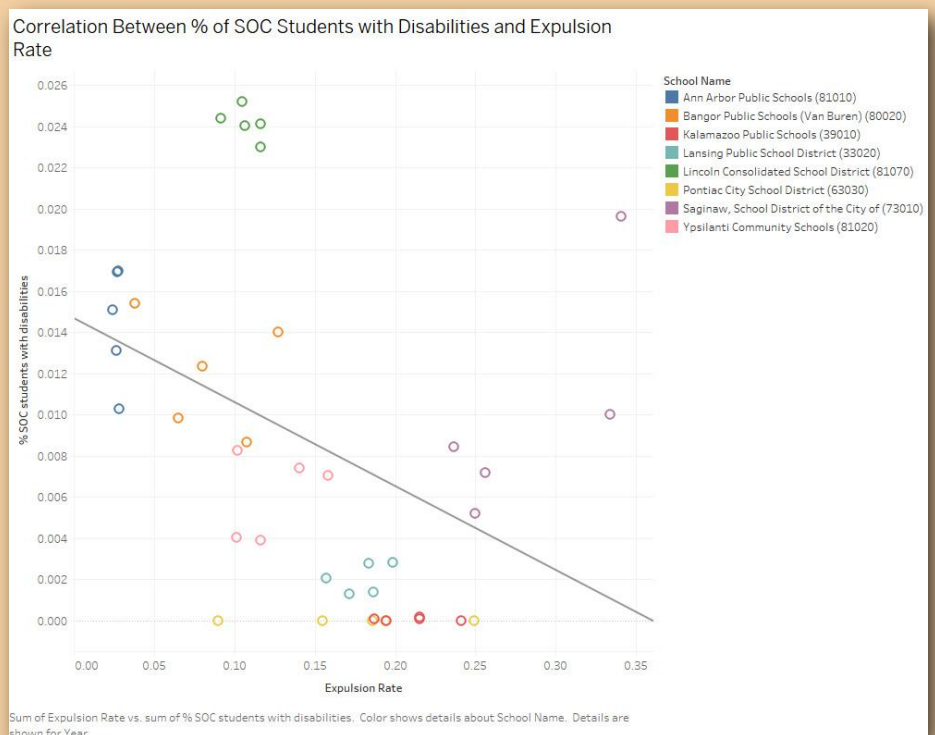
- Each dot represents an individual school district
- years covered in the graph: 2017-20, 2022-24

Regression results

- There is a connection between the two variables, the result shows a **moderate negative relationship**;
- harsher disciplinary environments may exclude students with disabilities from SOC programs;
- This test is **statistically significant** ($p\text{-value} = 0.0097 < 0.05$).

Takeaways

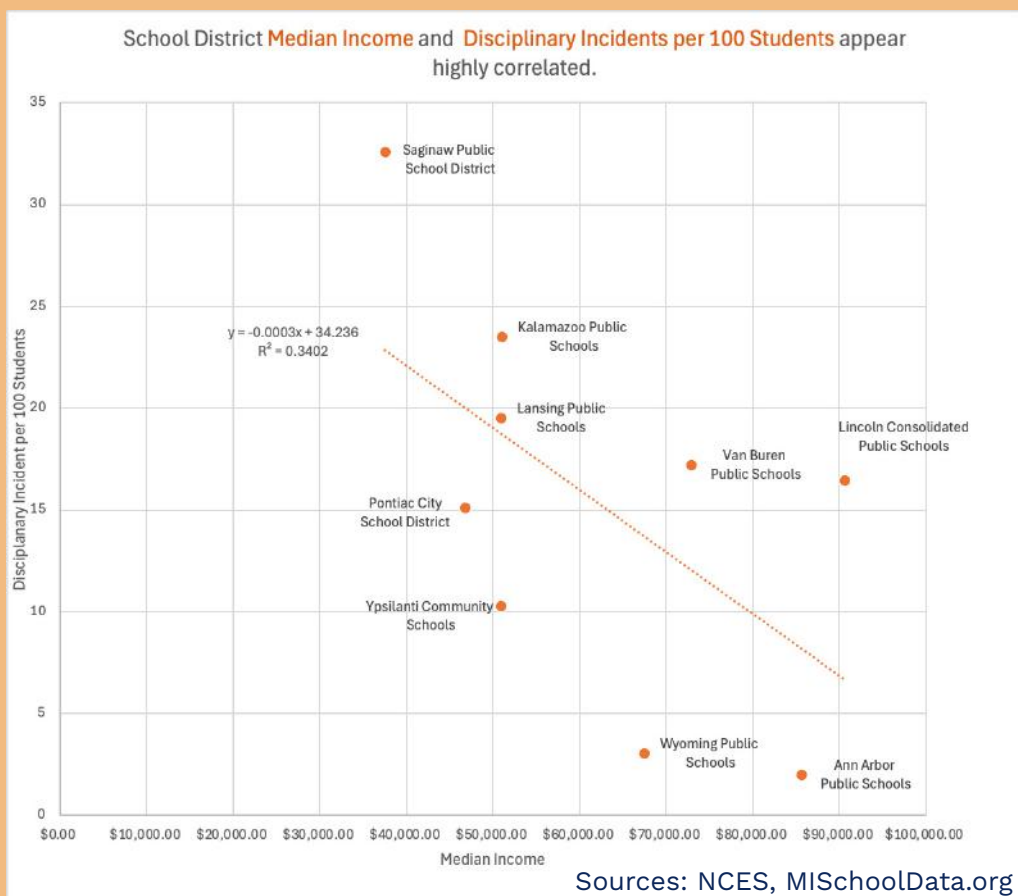
- "Ypsi" schools tend to have higher % of SOC students with disabilities and overall **lower expulsion rate**
- This could imply a more supportive environment and higher accessibility for students with disabilities



Broader Community Factors: Income

Figure 11. Median Household Income by District vs. District Disciplinary Incidents per 100 students.

Each bulletpoint represents a school district. Disciplinary Incidents include the sums of suspensions and expulsions. The data utilized in this figure is from the 2023-2024 school year.



Main Takeaways

As **Median Income increases**, the disciplinary rate slightly decreases (Coefficient = -0.0003042).

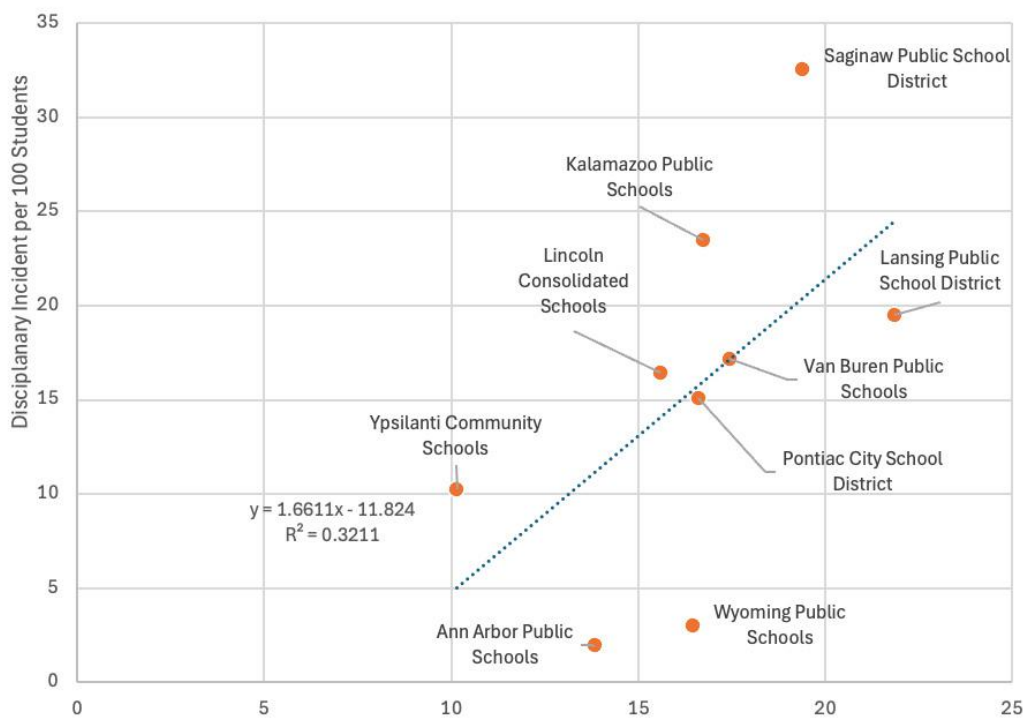
Median Income explains about **34% of the variation** in disciplinary rates across districts ($R^2 = 0.3402$).

The relationship is **marginally statistically significant (p-value = 0.0993)**, suggesting income may play a role, but other factors likely have a greater impact.

Broader Community Factors: Student-Teacher Ratio

Figure 12. District Student-Teacher Ratio vs. District Disciplinary Incidents per 100 students

District student-to-teacher ratio and Disciplinary Incidents per 100 Students appear highly dependent on each other.



Each bullet point represents a school district. Disciplinary Incidents include the sums of suspensions and expulsions. The data utilized in this figure is from the 2023-2024 school year.

Main Takeaways

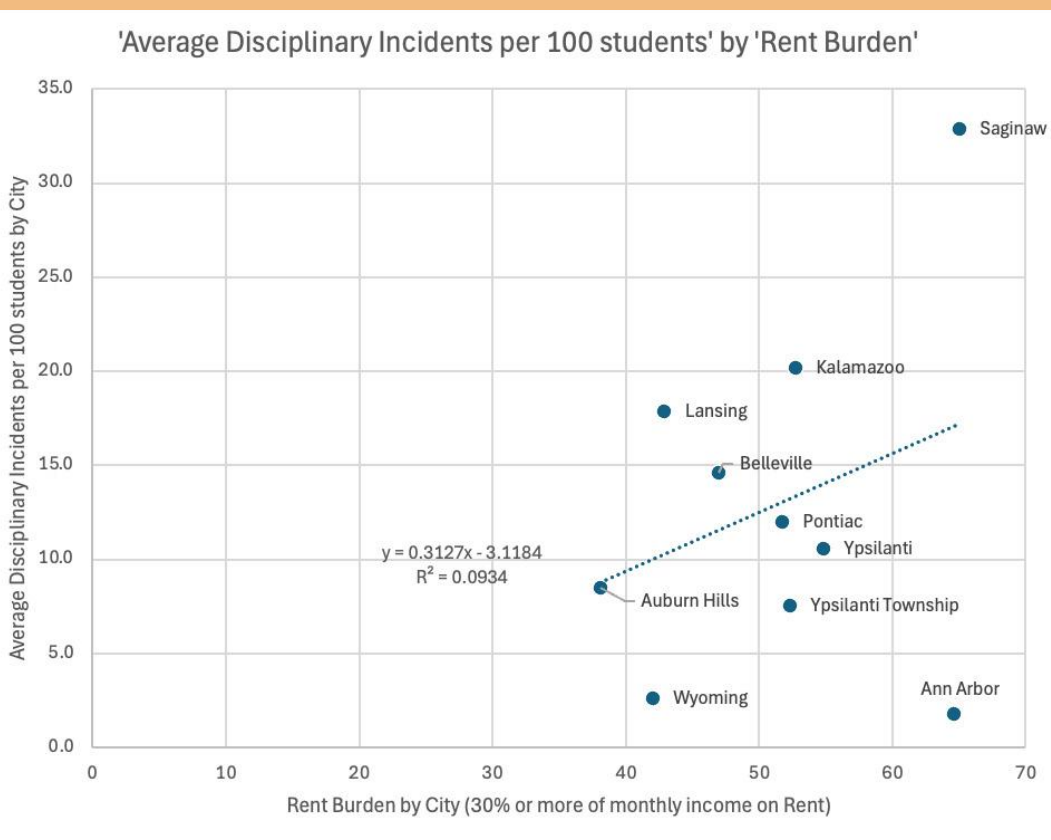
As the **student-to-teacher ratio increases**, the disciplinary rate also increases (Coefficient = 1.6611).

Student-to-teacher ratio explains about **32% of the variation** in disciplinary rates across districts ($R^2 = 0.3211$).

The relationship is **marginally statistically significant** (p-value = 0.1116), suggesting larger class sizes may be linked to higher disciplinary rates, but other factors likely play a role.

Broader Community Factors: Rent Burden

Figure 13. Average Disciplinary Incidents per 100 Students by Rent Burden



Each bulletpoint represents a city that one of the comparative school districts is in. Disciplinary Incidents include the sums of suspensions and expulsions of schools within the city that are also in the set of districts that were selected for this study. The data utilized in this figure is from the 2023-2024 school year.

Sources: 2023 ACS-1 Year Estimate (US Census), MISchoolData.org

Main Takeaways

As **rent burden increases** by 1%, the disciplinary rate increases slightly (Coefficient = 0.3127).

Rent burden explains about **9% of the variation** in disciplinary rates across districts ($R^2 = 0.0934$).

The relationship is **not statistically significant** (p-value = 0.3906), suggesting that rent burden does not strongly influence disciplinary rates.

Key Findings Summary

1

Changes in Disciplinary Rates

The visualizations help illustrate that Ypsilanti schools experience **higher disciplinary rates** than both neighboring schools and their collective average.

To provide context, we included trends from comparable schools with similar demographic and geographic characteristics. These schools have a higher collective average than even the highest disciplinary rates in Ypsilanti.

2

Black Students and Expulsions in Schools

Based on the regression analysis and visualizations, our group has concluded there is a slight positive correlation between the proportion of Black students and expulsions. The regression signifies that there is a possibility that **Black students could be disproportionately subjected to scrutiny and disciplinary policies** from school administrations. Given the shortage of data, it is difficult to ascertain whether or not school administrations mistreat Black students or if there are other underlying factors contributing to the regression. As a result, it is inconclusive to say whether Black students are subjected to disciplinary disparities.

3

School of Choice Students and Disciplinary Rates in Schools

From visualizations and trend analyses alone, we cannot determine if percent of School of Choice attendees is a good indicator of expulsion rates. However, there is **potential for a strong relationship between expulsions and how many students have left** a district to be School of Choice attendees somewhere else. It may be valuable to investigate further into why students have left these districts to find more relationships with the expulsions rates.

4

Disciplinary Rates and Broader Community Factors

Our analysis shows that community factors like income, class size, rent burden, and disability rates are linked to school disciplinary outcomes. **Higher median income** and **smaller class sizes** are associated with lower disciplinary rates, while rent burden shows little impact. **Schools with more SOC students with disabilities** often have lower expulsion rates, suggesting more supportive environments—seen in “Ypsi” schools in particular. However, exceptions like Saginaw Public Schools show that no single factor fully explains outcomes. Overall, a mix of accessibility, resources, and support likely plays a key role.

Moving Forward

This report examines disciplinary rates in Ypsilanti and similar cities with varying levels of **statistical significance**. However, the lack of demographic data on disciplined students limits the ability to draw strong conclusions. For future assessments, it is recommended to obtain **demographic data for individual expulsions** to better understand disparities in disciplinary actions.

Informed by both our findings and the literature, it's clear that addressing disciplinary disparities requires more than just analyzing rates—it calls for **systemic change**. If these issues are not addressed, schools risk reinforcing cycles of academic disengagement, dropout, and increased contact with the juvenile justice system—particularly for marginalized students.

However, when equity-driven models like **restorative justice** and **Positive Behavioral Interventions and Supports (PBIS)** are implemented effectively, schools can see reduced suspension rates, stronger school climates, and better academic outcomes. It's important that these approaches are not only adopted but implemented with fidelity, monitored consistently, and supported through training and accountability structures. Without oversight, even well-intentioned reforms can be **inconsistently applied or subject to bias**. Addressing these disparities thoughtfully offers an opportunity to build safer, more supportive, and more equitable school environments across Michigan.