

HOMICIDE RATE AND STUDENT'S PERCEPTIONS OF INSECURITY IN EL SALVADOR: A SPATIAL ANALYSIS

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INTRODUCTION

The Gang Resistance Education and Training Evaluation (GREAT) Program was developed by the Phoenix, Arizona Police Department and agents from the U.S. Bureau of Alcohol, Tobacco, and Firearms (BATF) in 1991. GREAT, a police officer-led program, aimed to reduce youth's involvement in gangs and educate them on the consequences of gang involvement through 40-50 minute sessions, where they would cover themes such as the impact of gangs on communities, resistance to peer pressure, and conflict resolution tactics.

In 2009, the GREAT organization partnered with the U.S. Department of State's Bureau of International Narcotics and Law Enforcement Affairs (INL) to bring the program to Central America, whose implementation began in 2011, and then made its way to El Salvador- the country with the highest concentration of gang members per capita in the region- in 2012 (Seelke, 2020). El Salvador's GREAT program is managed by the Community & Citizen Police Unit and as of May 2022, has trained 666 law enforcement offers as instructors, with 4,298 primary and intermediate school students having graduated from the program.

In October of 2022, a rapid assessment, consisting of student surveys and focus group discussions, was conducted in GREAT and non-GREAT implementing schools to understand the methods, results, and effectiveness of the GREAT program. The surveys also assessed student's feelings of insecurity on the way to school, in school, and in their neighborhoods. Follow-up surveys were conducted in February 2023.

RESEARCH QUESTIONS

#1. Where are GREAT and non-GREAT schools located, and is there a difference in the level of contextual violence, measured by homicide rates, between GREAT and non-GREAT implementing schools?

#2. What is the perception of insecurity in schools at baseline (Oct. 2022) and at endline (Feb. 2023)? How is this perception related to the contextual violence?

#3. What is the rate of change in percentage of insecurity over time (baseline -> endline) in GREAT and non-GREAT implementing schools?

DATA & METHODOLOGY

Crime incident data was provided to the Pulte Institute for Global Development at the Keough School of Global Affairs by the National Civil Police of El Salvador. Population data is 2020-2030 projection data made available by El Salvador's Office of Statistics and Census. Homicide rate was calculated by $\left(\frac{\text{adding the total incidents of homicide between 2021-2023}}{2022 \text{ population data}}\right) \times 100,000$ for the 262 municipalities in El Salvador. Student's percentage of insecurity data was provided by the Pulte Institute for Global Development.

Utilizing ArcGIS Pro, a series of five choropleth maps were constructed to depict the homicide rate (# of homicides per 100,000 people) at the municipal level. Select by location queries were utilized to distinguish GREAT and non-GREAT schools on all maps. Each school was geocoded based on latitude and longitude coordinates. Figure 1 utilizes single symbols to depict the location of GREAT and non-GREAT schools. Labels on Figure 1 reflect the country's 14 districts. Figure 2 utilizes graduated symbols to illustrate the percentage of students who feel insecure at school at baseline (A) and endline (B), and Figure 3 utilizes graduated symbols to depict the rate of change in the percentage of students who feel insecure at school at baseline (A) and endline (B).

FIGURE 1. HOMICIDE RATE AND GREAT VS. NON-GREAT SCHOOL LOCATIONS

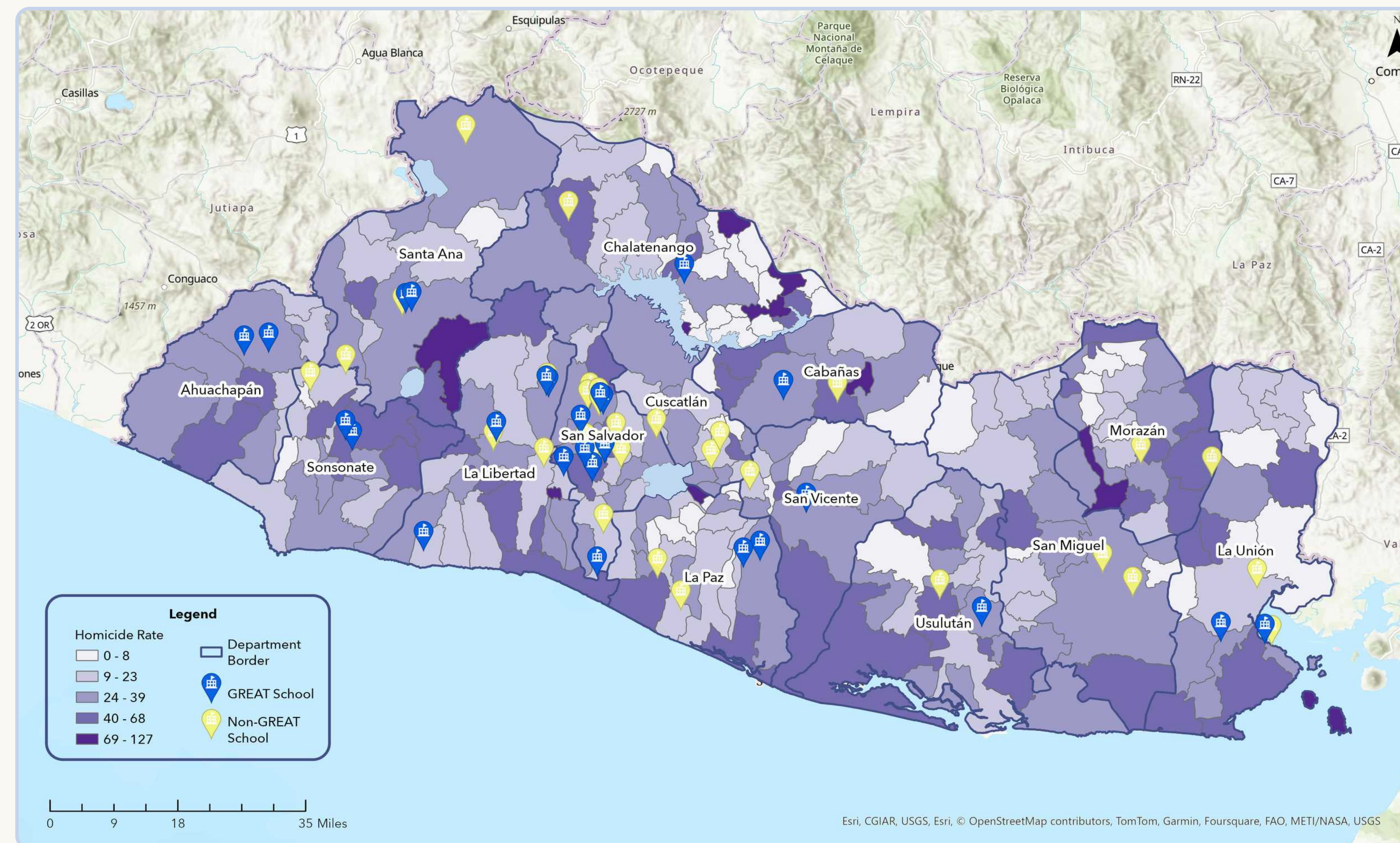


FIGURE 2. PERCENTAGE OF STUDENTS FEELING INSECURE AT SCHOOL (BASELINE VS. ENDLINE)

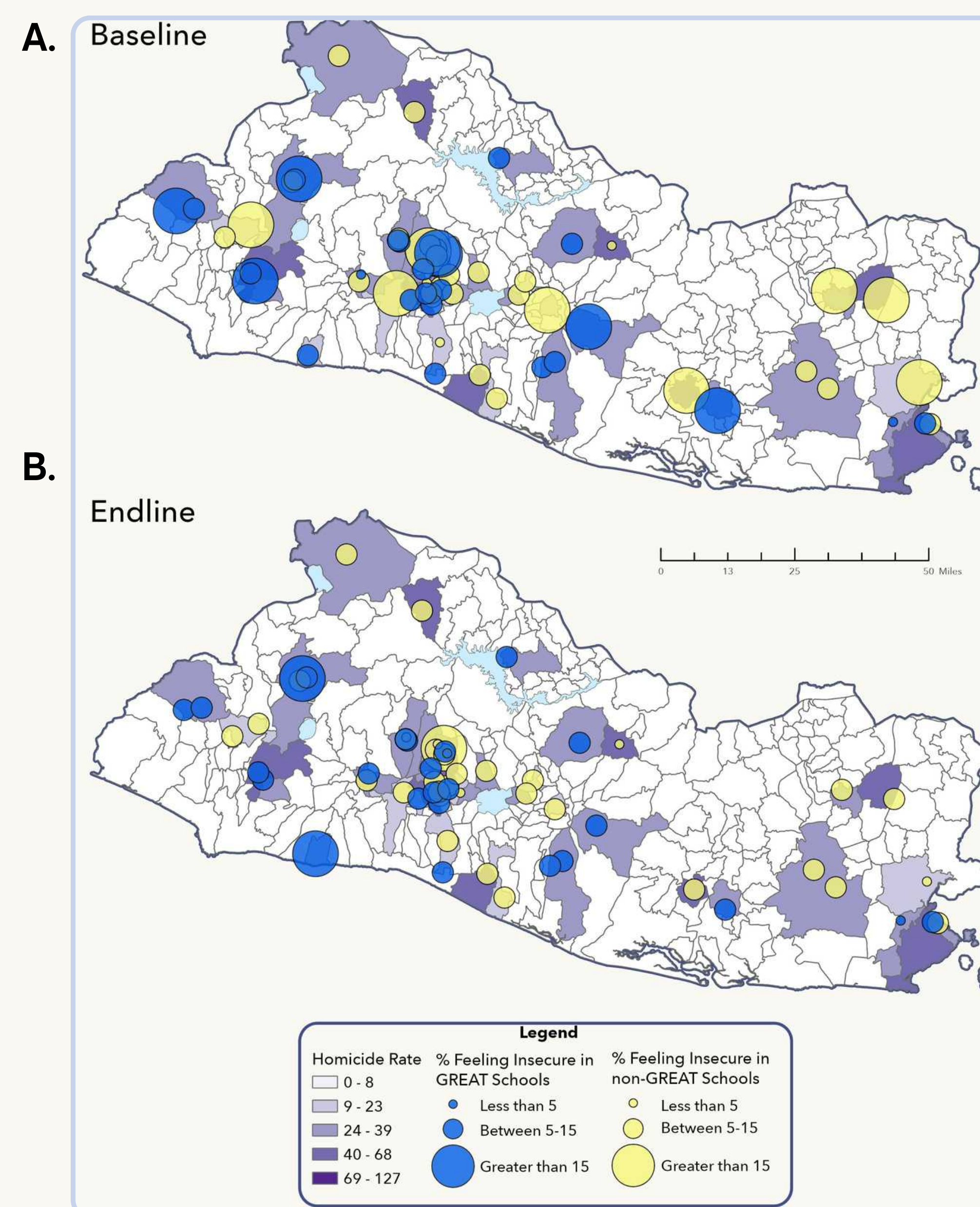
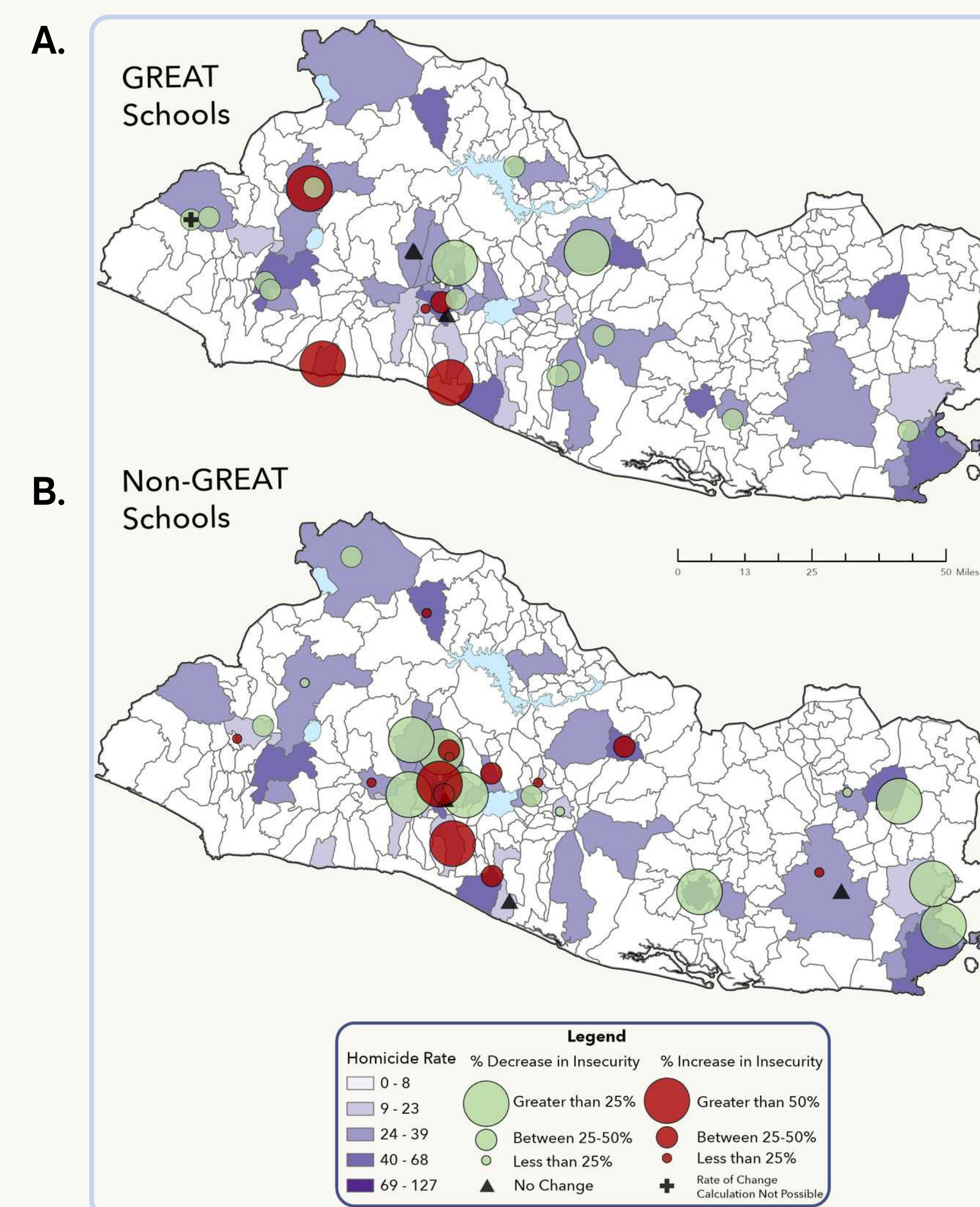


FIGURE 3. RATE OF CHANGE IN PERCENTAGE OF STUDENTS FEELING INSECURE AT SCHOOL



FINDINGS

- Both GREAT and non-GREAT schools are primarily situated in municipalities with moderate to high homicide rates (24-69), indicating that both groups of schools operate in contexts of significant violence. Many GREAT and non-GREAT schools are concentrated in the San Salvador Department.
- By the endline (Feb. 2023), most GREAT and non-GREAT schools show a clear reduction in the percentage of students feeling insecure at school.
- Fewer GREAT schools (5) saw an increase in the percentage of insecure students than non-GREAT schools (13). Both great and non-GREAT schools had schools with no change (3).
- While both groups achieved reductions in insecurity, non-GREAT schools had a slightly higher average percentage decrease (42.6% vs. 32%). This could indicate the influence of additional contextual or school-specific factors outside of the GREAT program.

Summary Statistics	GREAT Schools	Non-GREAT Schools
# of Schools Studied	26	34
Min % Insecure at Baseline	0	2
Max % Insecure at Baseline	19	24
Average % Insecure at Baseline	11.8	11.9
Min % Insecure at Endline	3	0
Max % Insecure at Endline	19	16
Average % Insecure at Endline	10.5	9.6
# of Schools with Increase in % of Student Insecurity	5	13
Average % Change (Increase in Student Insecurity)	73.30%	56.20%
# of Schools with Decrease in % of Student Insecurity	17	18
Average % Change (Decrease in Student Insecurity)	32%	42.60%
# of Schools with No Change in % of Student Insecurity	3	3
# of Schools Where Rate of Change Calculation Not Possible	1	0

CONCLUSION

Both GREAT and non-GREAT schools in municipalities with moderate to high homicide rates saw a reduction in students' feelings of insecurity. GREAT schools demonstrated more consistent outcomes, with fewer instances of increased insecurity than non-GREAT schools. However, the slightly greater average reduction in the percentage of students feeling insecure for non-GREAT schools suggests that external factors may also play a significant role. These findings highlight the impact of the GREAT program while pointing to the importance of considering broader contextual influences on student's feelings of security.

RECOMMENDATIONS

Future research should explore the contextual or school-specific factors contributing to differences in students feeling insecure in non-GREAT vs. GREAT schools. Future research could also analyze other survey indicators, such as students' feelings of insecurity on the way to school or in their neighborhoods. Hot spot analysis of homicide rates, or analysis utilizing other gang-related crimes would also provide interesting insights.

LIMITATIONS

The study is limited by its relatively small sample size of 60 schools, and a non-random selection of GREAT schools- as such, no causal claims can be made.