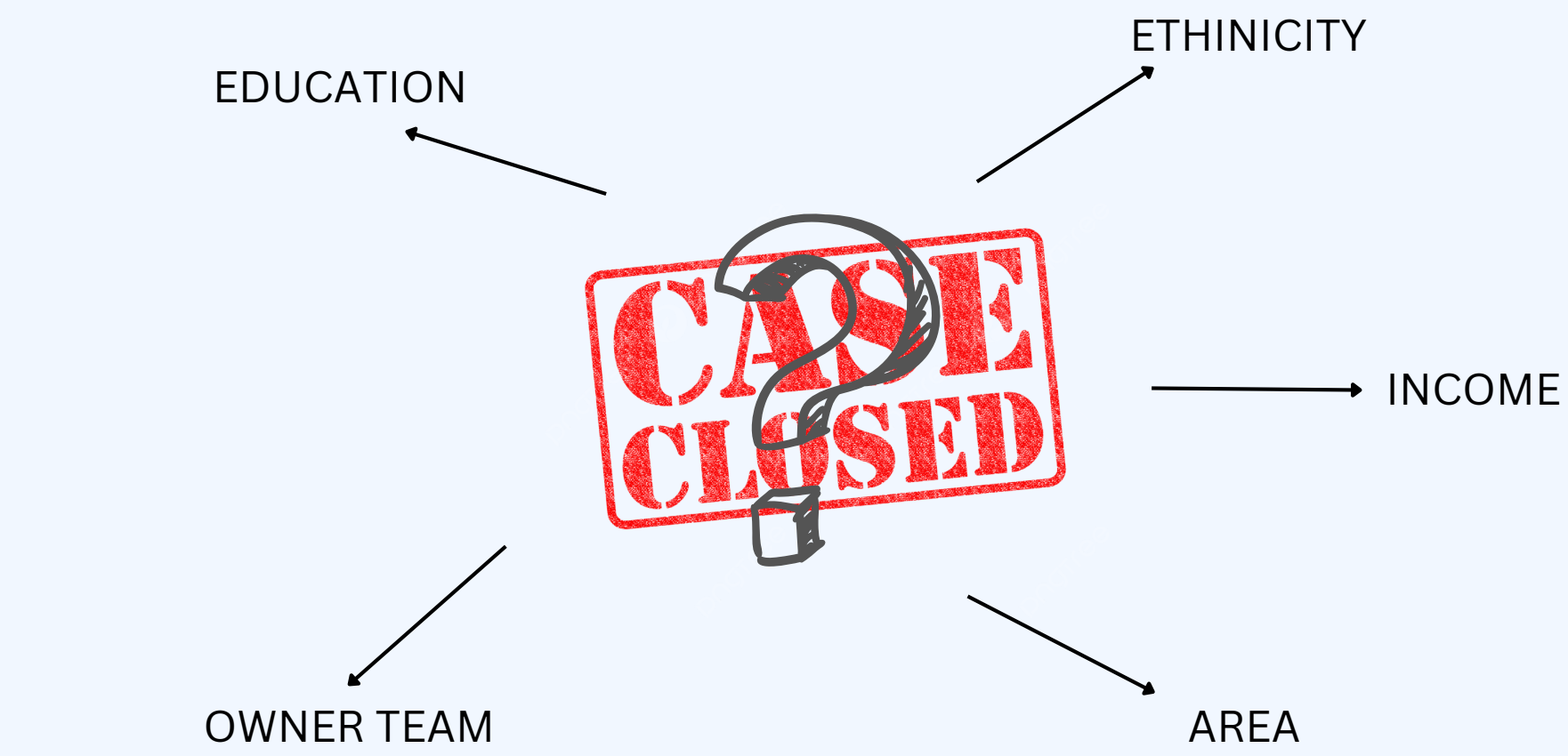


PROBLEM STATEMENT

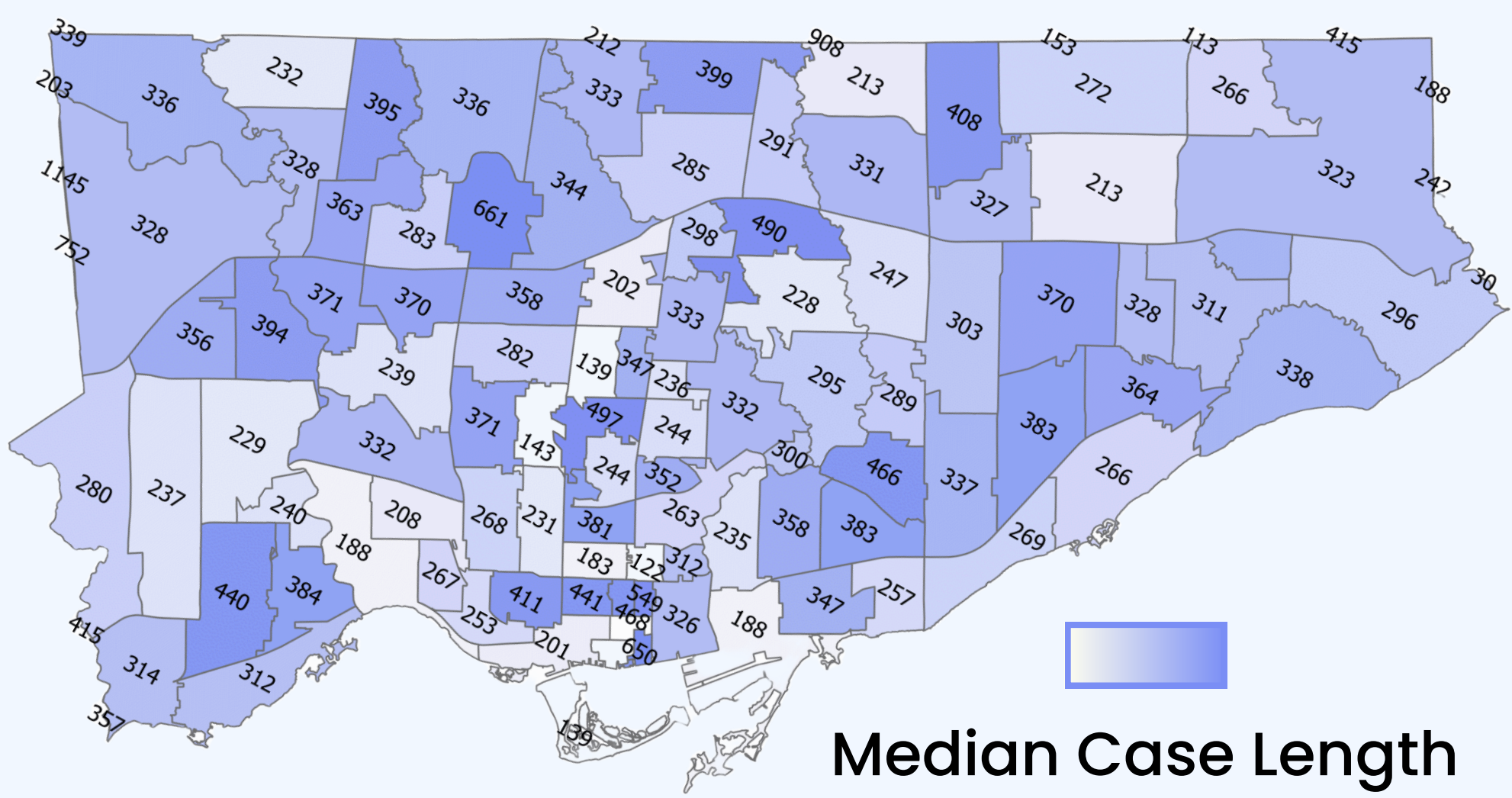
The Children’s Aid Society of Toronto (CAST), a non-profit founded in 1981, works to ensure children’s safety and helps to prevent child abuse and neglect.

Most cases close in 45-60 days, but some take over a year. Our analysis uncovers factors behind delays in quick resolutions with the help of predictive models.



APPROACH

- Dataset:
- 2,800 records with 27 columns detailing various aspects of individual cases and case-specific attributes.
 - 2021 Census data for Toronto, including FSA-wise population, schools, police precincts counts allowing us to analyze their influence on case durations and counts.

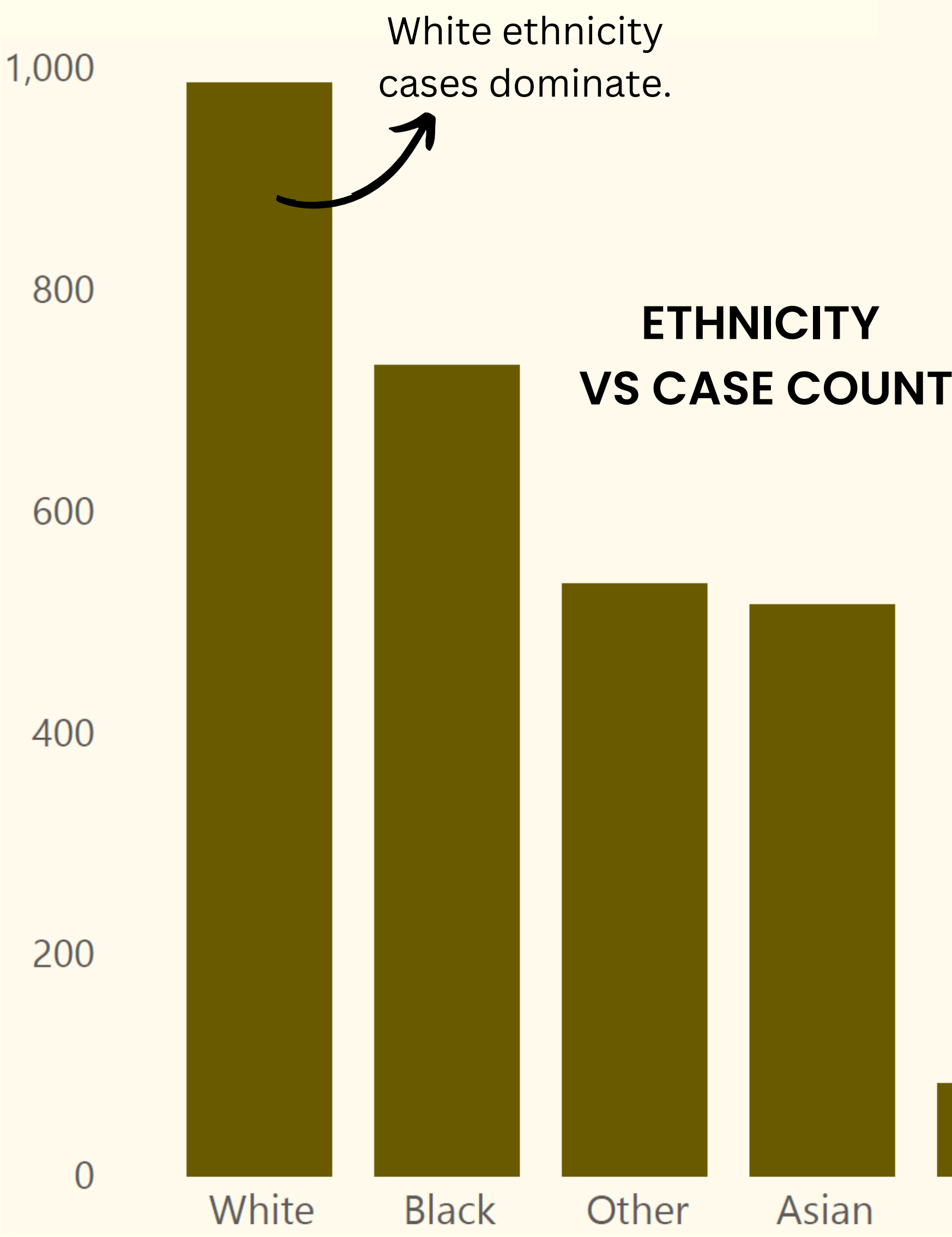
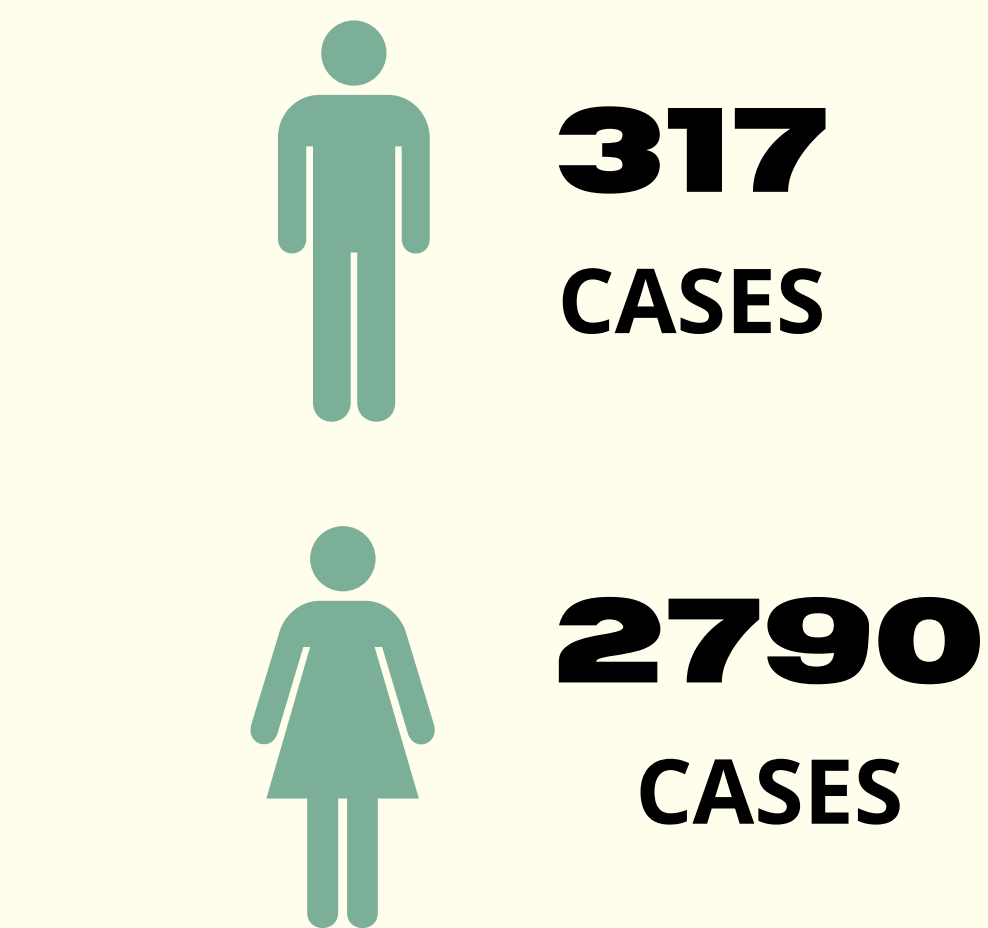
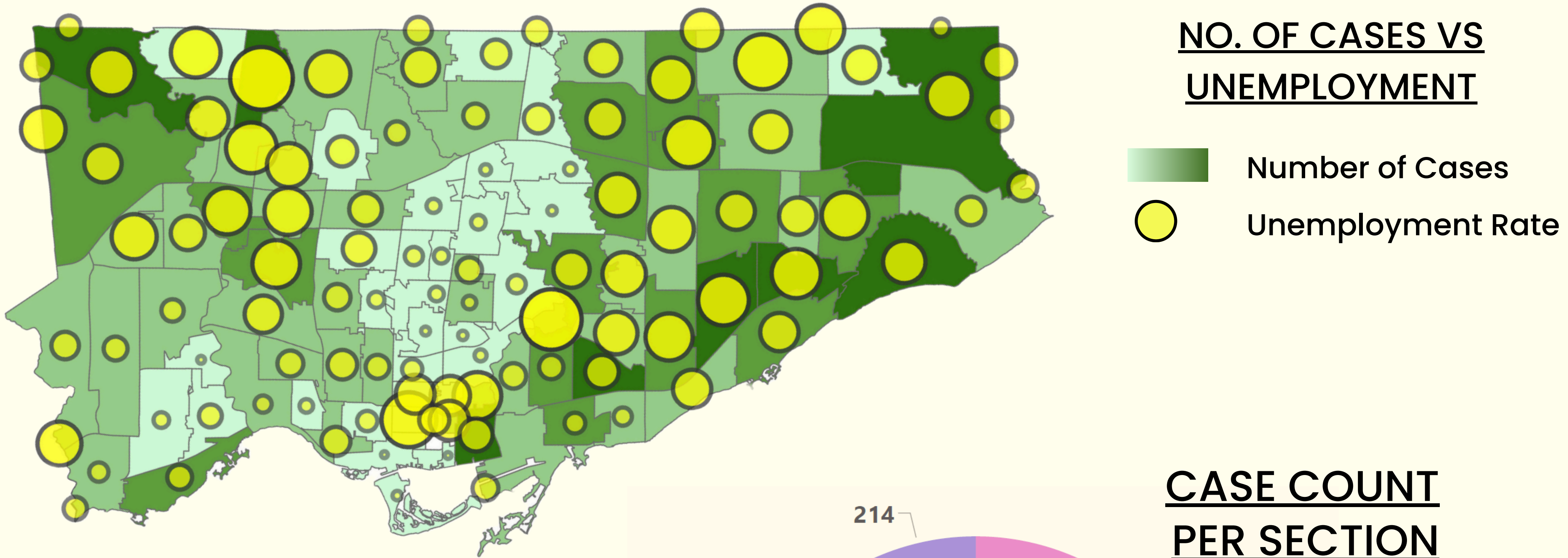


FSA WISE LENGTH OF CASE (MEDIAN)

Our approach focused on cleaning, feature selection, and applying machine learning models to identify key factors influencing case closure times.

VALUABLE INSIGHTS FROM DATA

Toronto’s case distribution, visualized through an FSA-based geo map, highlighted unemployment trends and case hotspots. Gender imbalances, section-wise case distributions, and ethnicity showed significant effects, with caregiver capacity emerging as the most influential factor.

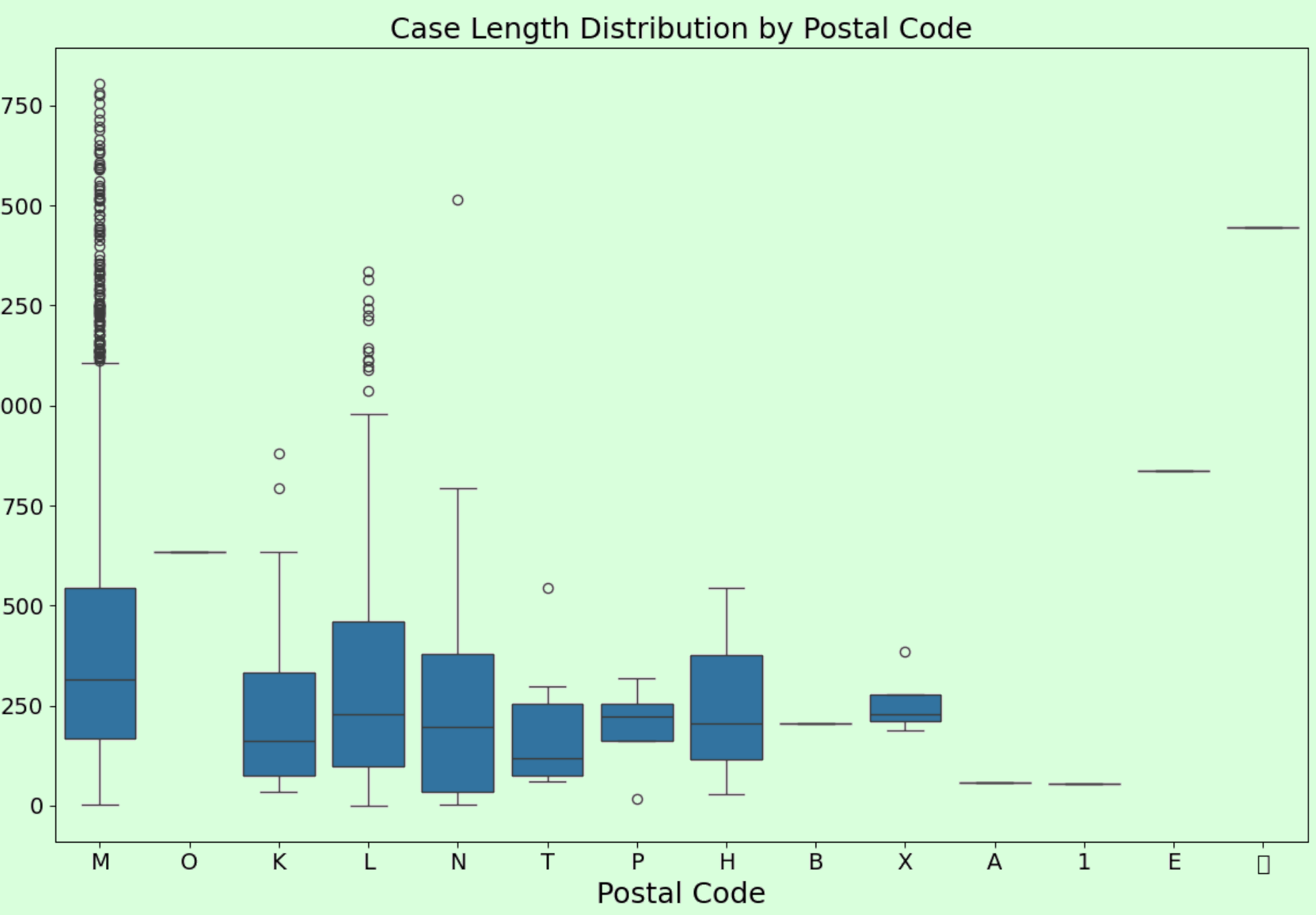


TOP 3 FACTORS

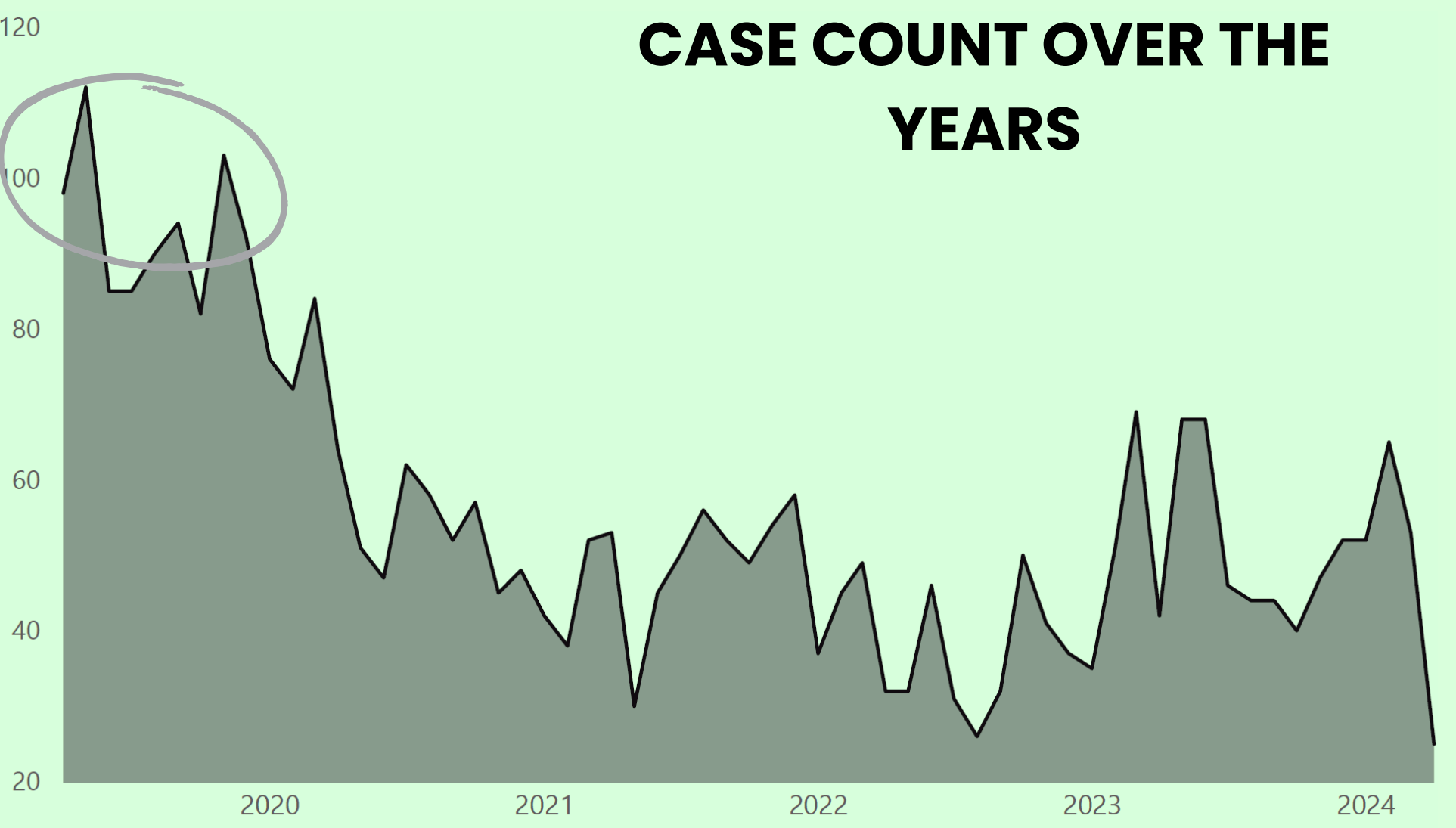
- SECTION - CAREGIVER CAPACITY**
Caregiver demonstrates potential threat to child.
- OWNER TEAM**
Case handling team.
- SEVERITY**
Case severity decided based on all information about child.

RESULTS AND FINDINGS

Toronto (postal code ‘M’) had the highest number of cases requiring extra attention.



Case numbers spiked in 2019–2020, likely due to the pandemic, followed by a steady decline.



FUTURE SCOPE

- Expand GIS analysis to include temporal trends and geographic clustering.
- Integrate new datasets (housing, healthcare) to uncover deeper insights.
- Highlight key features i.e. case section, severity and team dynamics for targeted solutions.
- Leverage NPL to study case worker notes for richer predictions.
- Build explainable AI tools and interactive dashboard for real-time insights