

Literary Review

As discussed in the abstract, I plan on investigating the factors that are contributing to high crime rates in Toronto, and not only where our resources should be focused, but which resources should we be using in order to see a reduction in these values. We explored our approach to answering these questions in our methodology section where we briefly evaluated the use of various methods such as tests of association, and time series cross validation in order to procure solutions to our problem.

Whilst my question focusses more on what individual traits do each neighbourhood have that contribute to their crime rates, similar studies have been done but with slightly different objectives. A very notable example of this is the Toronto Strong Neighbourhoods Strategy, which is an extension of the Neighbourhood improvement Areas program, data from which we are using in our own evaluations. This study, like ours, evaluated each neighbourhood across various socioeconomic and demographic traits, and accordingly either assigned it as an NIA or not (with the potential to reevaluate later). Neighbourhoods that are assigned as NIAs become part of the neighbourhood planning strategy with the objective that upon revelation it will no longer be an NIA. This strategy has been proven effective as there are a few neighbourhoods who are no longer designated as NIAs. This program uses classification to decide whether a neighbourhood is at risk or not, and then uses focus groups and community members to help assist in

deciding what changes should be made (i.e. improvements in adult education, employment resources, child care, etc). (City of Toronto, 2020). Likewise, I primarily use classification in my analysis in order to answer my research question. However, I have used multi class classification methods as I have been classifying data points into 5 levels of crime rate severity, whereas the Toronto Strong neighbourhoods strategy classifies its data into either NIA or not an NIA. Further, The Toronto Strong initiative uses crime rate as an attribute that can be seen as contributing towards a neighbourhoods NIA status, whereas in my research crime rate is the variable of interest. The Toronto Strong initiative is a Toronto Municipal initiative and thus, unlike with my own research, has greater access to important contextual data. Examples of this would be overdose rates, archived homeless shelter data, and neighbourhood specific demographic information. These are some of many potentially useful features that I would have liked to examine in my own study, however was unable to due to access issues. In this way the Toronto Strong initiative was better able to fit models that were likely to be far more effective than my own.

Another study focuses on youth crime in Toronto, specifically police incidents involving youth. It looks at clusters of this activity, where it takes place (commercial, public, private property, indoors, outdoors etc). In particular it looked at the association between between youth crime rates and neighbourhood characteristics such as criminal opportunities, subway traffic, social control, and residential mobility. In this way this

study evaluates traits of neighbourhoods that are very different from the traits that I am evaluating in my own investigation. Here there is a focus on the geographical and environmental traits of neighbourhoods that enable crime to take place, whereas my focus is primarily on the more social factors within these neighbourhoods and how they can contribute to an increased likelihood to commit crime later. The study uses multivariate regression models to evaluate the significance of various geographical and environmental factors which are then used to predict where youth crime hotspots are located on a map. Once again, this study had access to data that I did not, and thus was able to create far more effective models and draw more robust conclusions as it was able to utilize far greater amounts of context providing data.