

An Exploratory Analysis of Arrests in Durham Counties

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Introduction to Topic and Motivation

Our Question

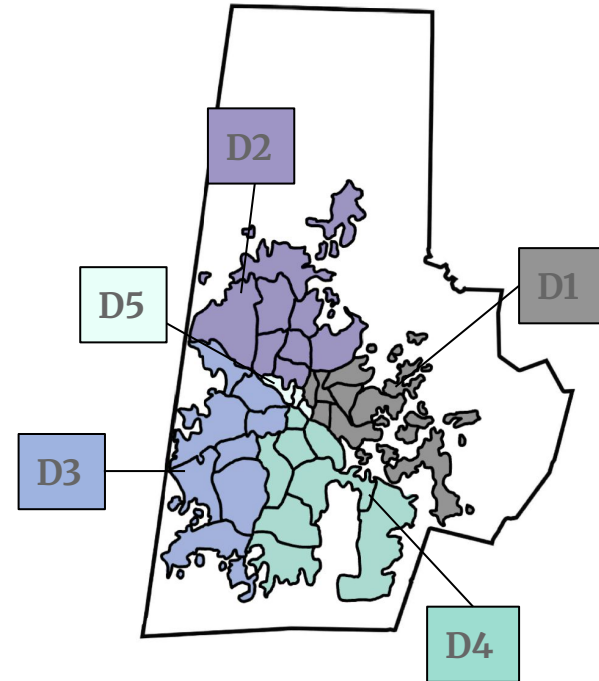
- What is the **relationship between arrests and demographic variables** like region, district, gender, and age? Do arrest counts **vary across gender**? Across **age groups**? Across **districts**?

Motivation

- Analyze historical arrest records to better understand how arrests may vary across the different counties in Durham
- Explore the relationship between arrests and gender and age

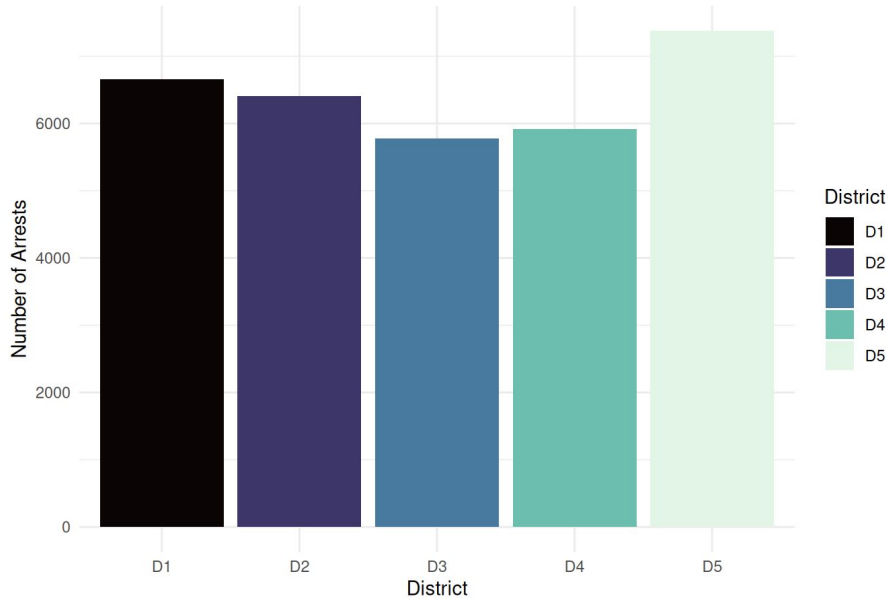
Introduction to Data

- The dataset provides records of all arrests and their respective demographic data (i.e. race, sex, age) from Durham county between the years 2018 & 2024
- Key variables:
 - district—the district in which the arrest was made
 - beat—the different policing regions across districts
 - sex—the sex of the individual arrested (M or F)
 - age_group—the age group of the individual arrested

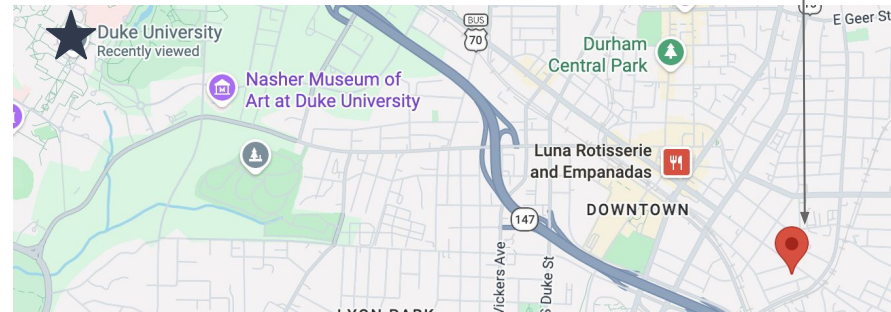


What We Found

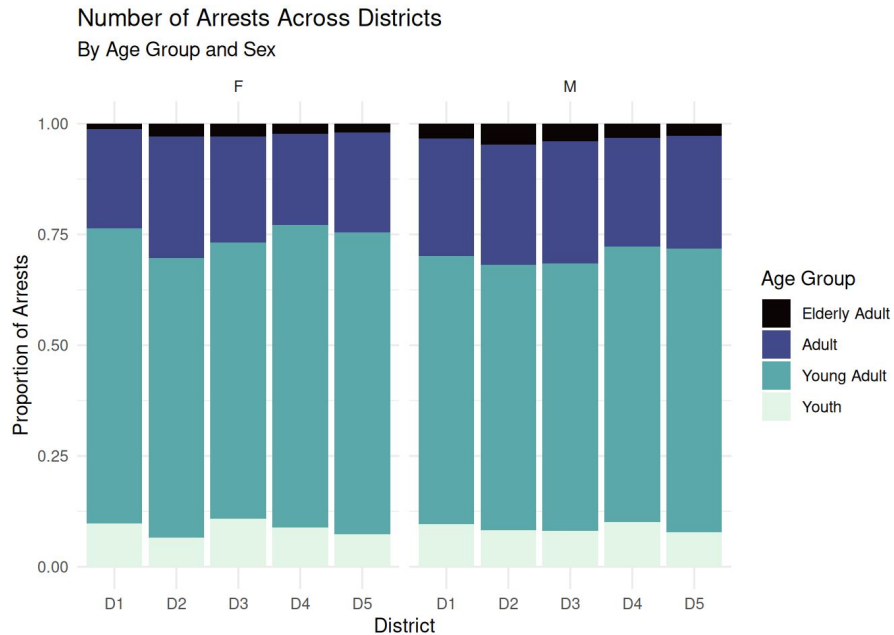
Number of Arrests Across Districts



- **District 5 has the greatest number of arrests**, followed by D1, D2, D4, and lastly D3.
- District 5 is located in downtown Durham

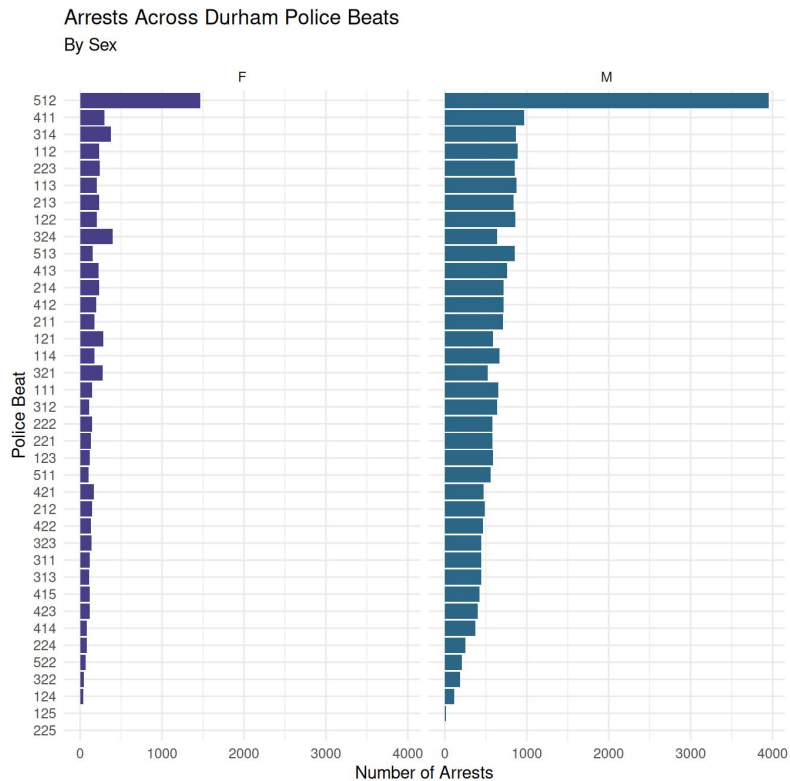


What We Found



- For both men and women, the **young adult age group (21 to 40 years old) dominate the percentage of arrests.**
- The distribution of arrests of each age group is relatively consistent across districts for both men and women.
- Youth and elderly adults have the smallest proportion of arrests for both men and women across all districts.

What We Found



- Arrest totals of **men >> women** across all beats.
- **Beat #512** extremely pronounced outlier, for men and women.
 - **~1500** women, **~4000** men arrested here.
- Small group of beats accounts for the majority of arrests.
- Six beats (414, 224, 522, 322, 124, and 125) represent disproportionately lower arrest counts.

Conclusions, Discussion, and Critique

Conclusions

- Largest number of arrests in District 5.
- Men constitute over twice as many arrests than women in all 5 districts.
- Young adults make up largest proportion of arrests, which is consistent across gender and district.

Critiques: No population data for beats or districts, crimes with undefined districts.

Future work: Integrate and compare a dataset that reports census data for the five districts over the years so that accurate arrest rate information can be presented.

