

Disparities in the police department with respect to incentives and disciplinary actions

Theme:

There is a considerable amount of imbalance in the police department with respect to features of the police officers like race and gender. The imbalance can be seen directly in the population of the officers in each district as well as indirectly in some ways. We want to know the effect of this imbalance on:

1. The recognition the officers receive in their department
2. The disciplinary actions taken against the officers in their respective departments

The questions we are asking are specific enough to inform us of reasons behind any plausible biases/disproportionate behaviours in the police officers. These answers to the questions we raise, when evaluated over periods, help policymakers and anti-discrimination legal groups make policies to curb them. For example if it is clear that the department in a certain district is promoting mostly one race officers disproportionately (with a significantly higher percentage over other races), then it would mean that the officers who are performing well might not be rewarded. This might cause damage to the morale of the officers of other races which will affect the effort they put into policing. If such a thing is proven using the data, then it would force the administration or any legislative body to make better policies in order to reduce this.

There are many metrics to measure the incentives the officers get like awards, promotion etc. As promotions are pretty rare in the department, we selected the number of awards given as a metric to measure the incentives.

Questions:

- What is the proportion of total awards given to officers of a certain race in each district?
- What is the proportion of total awards requested by officers of a certain race in each district? This would give us insight into the dynamics between officers in that particular department.
- How does the proportion in question 1 correlate with the general population make-up of that district? This would give more information about the majority in that district and if that affects the awards given internally.
- Is there a difference in the way internal and external complaints are handled controlling for the race of the population? This would prove if there is an imbalance in the disciplinary actions against police officers based on the racial makeup of the districts.
- Do the investigators handling misconduct allegations play a role in differences in handling them? If yes, it shows that in the networks of investigators and officers causes the disparities in the way internal and external complaints are handled. If no, it shows that there might be other factors which cause the disparity
- Can we find the complaints which were mishandled based on the ones which were handled properly? This gives an indication into how many internal/external complaints

are being mishandled. This in addition to the external racial makeup, shows if there is a bias in disciplinary actions based on the racial demographics.

Data in CPDB:

The data we need to analyze the above questions will be found in the following tables:

- Data_policebeat
- Data_area: A join of data_policebeat and data_area will give us the district wise areas.
- Data_officer: Joining this with the above area table will get us any metric we want aggregated by area (race, rank, gender etc)
- Data_awards: The main table that has the awardee and requester information. This,when joined with the tables above will give us a master dataset that contains all the information required for our analysis on the incentives disparity in the department.
- Data_allegation: The allegation and its details(is officer or is civilian) can be found in this
- Data_racepopulation: This in addition to the data_area, gives the racial makeup of the populations
- Data_investigator: The details of the investigator and their details
- Data_investigatorallegation: The table required to join data_investigator and the trr_trr and data_allegation
- Trr_trr: The trr report which gives us detailed information of the report and a key table to join with others
- Trr_trrstatus: The status of the trr report can be found in this table

Checkpoint 3: Interactive Visualization

- We want to show the districts in which the disparity of incentives based on races is the most. We will be using an interactive bar chart district wise that gives information about the proportion of awards officers of a certain race are getting and how much it differs from the proportion of that certain race in the population of officers.
- We want to find out if the racial makeup of the population affects how officers are disciplined for internal and external complaints.

Checkpoint 4: Graph Analytics

- An important part of our analysis is to look at the officers who are requesting the awards. This can be done using graph concepts in which each node can be an officer and each edge between two officers will denote the awards requested. Doing this analysis we hope to find if the reasons behind the awards disparity lies in the officers who are nominating these awardees
- Is there a fair/unfair handling of complaints through the disciplinary actions based on the relationship between Investigators and misconduct alleged officers, through external racial demographics

Checkpoint 5: Natural Language Processing

- Can we find similar complaints which were handled differently? Let's consider that there are two complaints which have the similar wordings in their respective complaint text and that they deal with the same topics, but their outcomes were different. Why are they differently handled and how many such cases exist in our database?