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CS396

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Checkpoint 1: Relational Analytics

Our investigation concerns the relationship between racial demographics and the nature of police misconduct, so our primary goal for this checkpoint was to establish some preliminary answers to questions that are more foundational to the investigation of the topic. Before we can dive deeper into the intricacies of this relationship, we need to establish some base level understanding of the statistics, such as how heavily policed different areas are, what kind of misconduct they commit, and how the racial demographics break down geographically. We chose to investigate these questions with the following queries:

- 1) What is the number of police officers per capita that are assigned to each police district?
- 2) What is the number of complaints per capita per police district?
- 3) What is the proportion of black residents in each police district?
- 4) Which type of complaint is most likely in each police beat?

While these by no means form an exhaustive list of the necessary considerations to answer this question in its entirety, they provide a solid foundation. Each question was motivated separately to tackle a different facet of the problem.

Our first question is aimed at addressing the question of how heavily policed each area is. Each police district is broken into several beats which are typically patrolled by 8 or 9 officers at a given time. However, beat size varies greatly meaning that in different police districts, the number of police officers assigned and the density of officers in a district is not consistent across districts. By looking specifically at the number of officers assigned to each district, we can see which geographic locations have higher concentrations of police officers. We discovered correlations between officer concentrations and civilian complaints, making the possibility of over policed neighborhoods very likely. We especially looked for correlations between the

number of officers in a district and the percentage of black residents residing in the district. We found that it was the case that high police officer presence was directly correlated with a high number of cases. The district with the highest concentration of officers, 11th, also had the highest complaint rate of over 25%.

Question 2 is something of an expansion to the inquiry of question 1, instead looking at how likely police are to get into an altercation. While the number of police officers operating in an area might reveal how heavily policed a district is on a governmental level, this question provides a more nuanced perspective on how aggressive the officers are in their policing. We tended to find that districts with higher proportions of black residents also had a higher level of complaints per capita, even when the number of police per capita remained stable.

Question 3 begins looking at the breakdown of the racial demographics in each location. We decided to isolate the black population in this regard because we felt that incongruencies in the misconduct of the Chicago Police Force would be primarily aimed towards black residents. We found that neighborhoods with higher proportions of black residents often had higher rates of policing, and endured more complaints (often by a significant margin). For example, both of the districts mentioned in the discussion of question 1 had populations with over 85% of residents being black. Understanding the racial demographic breakdown by geographic location will be critical to the ongoing investigation as we continue to uncover how police misconduct varies.

Our fourth question had an interesting result. We saw very little correlation between the demographics of a beat and the most frequent type of complaint. Across nearly all beats, weapons/ammunition and use of profanity were by far the most common complaints civilians had against officers. Although the number of complaints varied by beat, for example officers in beats with higher percentages of black residents tended to have more complaints, the actual complaints against the officer were extremely comparable to those in beats with low percentages of black residents. This meant that although officers had more allegations against

them in black communities, the type of misconduct in the Chicago police department is highly similar across the whole city. It would be interesting to see if police misconduct across the country followed similar patterns, or if this was unique to Chicago. If unique, CPD could reevaluate their training methods to possibly reduce their most common misconduct in the future.