Data Pirates - Tracking Effectiveness of Police Reform

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Overview:

Is police reform effective? We are assessing and tracking police reform to check if there are improvements after reformative interventions like the COPA. If police reform has been effective, there should be an observable yet gradual decrease in counts of misconduct and changes in officer behavior and accountability patterns. Research into tracking police reform is essential in knowing whether substantial improvements are being made across the board, identifying neighborhoods that might require additional supervision/intervention and checking for under-reporting of cases, and increasing vigilance in these areas accordingly.

Our goal is to leverage the information available on types of complaints made by both civilians and officers alike against police officers, based on neighborhood, complaint outcomes, the extent of discipline, and information on subsequent investigation to gain insight on if and how accountability is being enforced. The bird's eye view of this checkpoint explores (1) What the effect of COPA is geographically on types of complaints (2) How the officers are held accountable for their actions (3) What the effect of COPA is on the types of complaints.

Findings - Question 1
What are the top 3 complaints in each neighborhood before COPA?

Analysis:
The Chicago City Council passed an ordinance on October 15, 2016, to establish the Civilian Office of Police Accountability (COPA), which replaced the Independent Police Review Authority (IPRA) as a civilian oversight agency of the Chicago Police Department (CPD) which was then enforced from September 15, 2017. This question describes the top 3 categories of allegations against the officers of CPD in each neighborhood before the advent of COPA. If we can identify the most common allegations before the advent of COPA then we can compare the same with findings after the advent of COPA to see if the civilian oversight agency has had any effect. We can also pinpoint problem areas in each neighborhood so that training of officers and more stringent investigative procedures can be applied in these neighborhoods to decrease/change the trend of misconduct.

Discussion:
To answer this question we start with a series of queries on data_area, data_allegation_areas, data_allegation, and data_allegationcategory to create a temporary table instance called temp_ncd_data to hold data on the category and date of each complaint in a neighborhood. This table is partitioned to give us all the records before September 15, 2017, the advent of COPA, and stored in a temporary table instance called pre_copa. This table is further queried to get the top 3 categories of violations for each neighborhood.

name: Name of the neighborhood
category: type of allegation ranked in descending order per neighborhood
Number of rows generated for this query: 294 rows

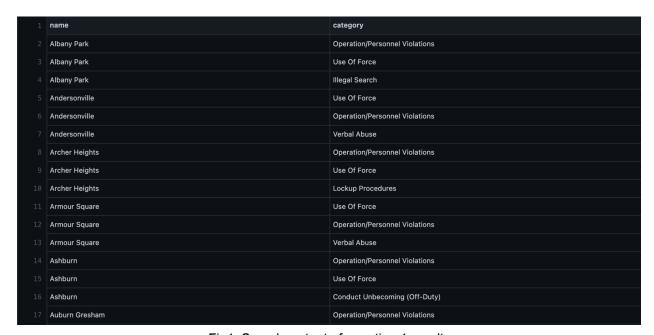|	name	category
1	name	category
2	Albany Park	Operation/Personnel Violations
3	Albany Park	Use Of Force
4	Albany Park	Illegal Search
5	Andersonville	Use Of Force
6	Andersonville	Operation/Personnel Violations
7	Andersonville	Verbal Abuse
8	Archer Heights	Operation/Personnel Violations
9	Archer Heights	Use Of Force
10	Archer Heights	Lockup Procedures
11	Armour Square	Use Of Force
12	Armour Square	Operation/Personnel Violations
13	Armour Square	Verbal Abuse
14	Ashburn	Operation/Personnel Violations
15	Ashburn	Use Of Force
16	Ashburn	Conduct Unbecoming (Off-Duty)
17	Auburn Gresham	Operation/Personnel Violations

Fig1: Sample output of question 1 results

Conclusion:
From the results, at a first glance, we can see that Operation/Personnel Violations and Use of Force are the most prevalent allegations in Chicago. This table provides more insight when combined with the results from Question 2.

Findings - Question 2
What are the top 3 complaints in each neighborhood after COPA?

Analysis:
As an extension of question 1, this question describes the top 3 categories of allegations against the officers of CPD in each neighborhood after the advent of COPA. With our findings, we can compare our results with those in question 1 to ascertain whether there have been

improvements since COPA was established in each neighborhood with regards to the most prevalent misconduct.

Discussion:

To answer this question we start with a series of queries on data_area, data_allegation_areas, data_allegation, and data_allegationcategory to create a temporary table instance temp_ncd_data to hold data on the category and date of each complaint in a neighborhood. This table is partitioned to give us all the records after September 15, 2017, the advent of COPA, and stored in a temporary table instance called post_copa. This table is further queried to get the top 3 categories of violations if available, for each neighborhood.

name: Name of the neighborhood
category: type of allegation ranked in descending order per neighborhood
Number of rows generated for this query: 204 rows

NOTE: The discrepancy in the number of rows of data despite being the same intended query is due to the disparity in the count of data before and after the advent of COPA. This is addressed further in the final conclusion of checkpoint 1.

	name	category
1	name	category
2	Albany Park	Operation/Personnel Violations
3	Albany Park	False Arrest
4	Andersonville	Operation/Personnel Violations
5	Andersonville	Conduct Unbecoming (Off-Duty)
6	Armour Square	False Arrest
7	Armour Square	Use Of Force
8	Ashburn	Use Of Force
9	Ashburn	Unknown
10	Ashburn	Conduct Unbecoming (Off-Duty)
11	Auburn Gresham	Operation/Personnel Violations
12	Auburn Gresham	Lockup Procedures
13	Auburn Gresham	Use Of Force
14	Austin	Operation/Personnel Violations
15	Austin	False Arrest
16	Austin	Use Of Force

Fig2: Sample output of question 2 results

Conclusion:

Comparing the findings from Question 1 and Question 2 we can see that in Albany Park, 'Operation/Personnel Violations' are still prevalent and COPA intervention hasn't had a significant effect. This lets us know that this is the area of misconduct that needs to be checked and tracked in that neighborhood. We can also observe that 'Use of Force' allegations have decreased in this neighborhood. This implies that reform, investigation, and intervention in this misconduct category by the COPA has resonated well in Albany Park. The sudden increase in

False arrests since 2017 is concerning and can be flagged for COPA to track these cases. Subsequently, new reformative actions can be implemented to stop this trend in misconduct before it exacerbates. This type of insight can be derived from records of each neighborhood, and targeted reform can also be implemented as well as tracked.

Findings - Question 3

For all officers that had sustained allegations, what were the disciplinary actions taken?

Analysis:

This question describes the disciplinary actions taken by the CPD against officers on a variety of sustained allegations. This will help us track if there's justly measured accountability for these misconducts.

Discussion:

To answer this question, we query the tables data_officer, data_officerallegation and data_allegationcategory joined on officer_id and allegation_category_id for all officers with a sustained count >=1.

id: officer identification ranked in ascending order
first_name: First name of the officer
last_name: Last name of the officer
category: type of allegation sustained against the officer
allegation_name: the name of the allegation sustained against the officer
final_outcome: the disciplinary action taken against the officer

id	first_name	last_name	category	allegation_name	final_outcome
5	Carmen	Abbate	Operation/Personnel Violations	Inventory Procedures	No Action Taken
5	Carmen	Abbate	Operation/Personnel Violations	Slow / No Response	No Action Taken
5	Carmen	Abbate	Operation/Personnel Violations	Miscellaneous	Reprimand
5	Carmen	Abbate	Criminal Misconduct	Conspiracy To Commit A Crime	No Action Taken
6	Anthony	Abbate	Use Of Force	Excessive Force / On Duty - No Injury	No Action Taken
6	Anthony	Abbate	Lockup Procedures	Prisoners Property	No Action Taken
6	Anthony	Abbate	Operation/Personnel Violations	Weapon / Ammunition	Penalty Not Served
6	Anthony	Abbate	Use Of Force	Unnecessary Display Of Weapon / On Duty	Unknown
6	Anthony	Abbate	Operation/Personnel Violations	Inadequate / Failure To Provide Service	No Action Taken
6	Anthony	Abbate	Operation/Personnel Violations	Insubordination	Penalty Not Served
9	Michael	Abbey	Illegal Search	Improper Search Of Person	No Action Taken
9	Michael	Abbey	Drug / Alcohol Abuse	Positive Drug Screen - Originated From Complaint	Separation
9	Michael	Abbey	Operation/Personnel Violations	Inventory Procedures	No Action Taken
11	Laura	Abbott	Operation/Personnel Violations	Neglect Of Duty	No Action Taken
11	Laura	Abbott	Use Of Force	Excessive Force / On Duty - Injury	No Action Taken
11	Laura	Abbott	Verbal Abuse	Use Of Profanity	No Action Taken
11	Laura	Abbott	Criminal Misconduct	Theft	No Action Taken
11	Laura	Abbott	Use Of Force	Excessive Force / Off Duty - No Injury	No Action Taken
11	Laura	Abbott	Operation/Personnel Violations	Traffic Pursuit	1 Day Suspension
11	Laura	Abbott	Operation/Personnel Violations	Miscellaneous	No Action Taken
12	Andrew	Abbott	Supervisory Responsibilities	Federal Civil Suit	No Action Taken
12	Andrew	Abbott	Operation/Personnel Violations	Neglect Of Duty	No Action Taken
12	Andrew	Abbott	Supervisory Responsibilities	Federal Civil Suit	No Action Taken
12	Andrew	Abbott	Illegal Search	Search Of Premise Without Warrant	No Action Taken
12	Andrew	Abbott	Illegal Search	Improper Search Of Person	No Action Taken
12	Andrew	Abbott	Supervisory Responsibilities	Federal Civil Suit	No Action Taken
12	Andrew	Abbott	Use Of Force	Excessive Force / Off Duty - No Injury	Reprimand

Fig3: Sample output of question 3 results

Conclusion:
At first glance, it's quite concerning to observe that the final outcome for most of the sustained allegations has no actions taken by the CPD. We can also observe that the disciplinary action taken for Use of Force allegations with no injury to the victim is quite underwhelming. The sustained allegations for this type of misconduct are generally followed with no action taken by the CPD. This sort of behavior is a violent precursor to more serious allegations and shouldn't go unchecked. We can also observe behavior patterns in these officers. For instance, Officer Laura Abbot has a pattern of violence but has faced only 1 day of suspension in her career. From this table, we can conclude that allegations against an officer have patterns that can be flagged and should entertain intervention from COPA. We can also observe disparate disciplinary actions that can be flagged and corrective action can be taken.

Findings - Question 4
For each type of allegation, how many were sustained before and after COPA?

Analysis:
This question describes the number of allegations per year that were sustained in each category of misconduct before and after the advent of COPA. This will allow us to understand the complaint trends and check what misconduct has decreased with COPA's intervention and which has increased and require more stringent reformative actions.

Discussion:
We first assume that "SU" in final_findings denotes Sustained and the rest of the notations are variations of the non-sustained allegation. We then start with a series of queries on data_officerallegation and data_allegationcategory joined on category_id where final_finding is "SU" - sustained, to create a temporary table instance called allegation_findings that holds data on category, the end date of findings of all sustained allegations. This table is further partitioned into two temporary table instances called precopa_allegation_findings (end_date < '2017-09-15') and postcopa_allegation_findings (end_date >= '2017-09-15') based on the end date. These tables are further queried to obtain temporary table instances prefindings and postfindings that have the count of allegations for every category of complaint, pre COPA and post COPA respectively.
The dataset holds records dating back to 49.9 years before the advent of COPA (September 15, 2017) and data of records 0.78 years after the advent of COPA. We do a primitive normalization on complaint counts over the number of years of data collected.
Our resultant table holds the category, allegation/year pre COPA and allegation/year post COPA on querying prefindings and postfindings.

category: type of allegation
pre_copa_allegations_per_year: allegation/year pre COPA per complaint category
post_copa_allegations_per_year: allegation/year post COPA per complaint category

	category	pre_copa_allegations_per_year	post_copa_allegations_per_year
1			
2	Operation/Personnel Violations	226.4929859719438878	10.2564102564102564
3	Domestic	8.6372745490981964	15.3846153846153846
4	Use Of Force	40.9619238476953908	57.6923076923076923
5	Excessive Force	0.02004008016032064128	8.9743589743589744
6	Illegal Search	3.6472945891783567	5.1282051282051282
7	Conduct Unbecoming (Off-Duty)	45.250501002004008	1.2820512820512821
8	False Arrest	0.64128256513026052104	7.6923076923076923
9	Lockup Procedures	33.6272545090180361	6.4102564102564103
10	Verbal Abuse	6.4328657314629259	8.9743589743589744

Fig4: Sample output of question 4 results

Conclusion:
Despite the data being disparate due to the duration of data collection, we can still make a few observations.

1. The most common allegations pre COPA were Operations/Personnel Violations, Conduct Unbecoming (Off-Duty), and Use of Force.
2. The most common allegations post COPA were Use of Force, Domestic, Operations/Personnel Violations.

From these observations, we can infer that there is a rise in Use of Force and Domestic Violations overall, and although there is a decrease in Operations/Personnel Violations, it is not as pronounced.

Overall in Chicago, training and more stringent disciplinary actions can be suggested in Use of Force and Domestic Violations. COPA intervention is also highly recommended.

Final Conclusion of Checkpoint 1:

The most glaring observation made about the dataset is about how skewed it is. We have 49.9 years' worth of data pre COPA whereas we have 0.78 years' worth of data post COPA. This adds bias and assumptions to the observations made above that can be rectified by normalizing the sustained vs non-sustained allegations over the number of police officers active in the force for every year. The effectiveness of reform can be checked for a few months before and after the timestamp '2017-09-15' to get a clearer picture. This can be further explored by using time series data visualization.

We can also further reconcile our assumption on the final_finding attribute by getting subject matter experts' opinions. This project can also evolve into the reconciliation of the data disparities between the website and our database.

References: https://www.chicagocopa.org/about-copa/our-history/