Checkpoint 5
NLP

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

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Overview

Both incentives and disciplinary actions are a form of feedback which officers receive depending on their performance and how they conduct themselves. Ideally officers with good performance and behaviour must receive awards and officers with bad behaviour or misconduct must be disciplined. This is a system that is present not just in the department but in all environments like schools, offices etc. Such feedback is important as it rewards good performance and punishes bad behaviour. But if this system is not completely fair and is biased towards officers of certain race or gender then the whole point of feedback is defeated. Good performing officers will be demotivated if they are not given awards because of their race. Officers who have bad behaviour will continue to keep doing so because they are not being disciplined, because of the bias towards their race. This will reduce the overall quality of policing. Hence we wanted to use the CPDB data to first test whether such bias is happening in the department so that we can bring awareness to this which helps us take a step towards possible solutions like increasing the diversity, or holding certain checks so that this doesn't happen. We have found through our previous checkpoints that this is indeed happening. This checkpoint helps us go deeper into identifying the topics from the summaries of allegations for disciplined and undisciplined actions.

Findings from previous work

From the previous checkpoints, our analysis has given us many conclusions. Some of them that are relevant to this checkpoint are:

1. Higher the Black population in a district, lesser the % of officers disciplined based on external complaints.
2. Most of the investigator-officer pairs are disparate. However, some of them are close and could be potential cause of the disparity in disciplinary actions
3. Some officers are highly likely to be associated with investigators and thus are likely suspects for repeat alleged offending patterns, probably causing the disparity in the way internal and external complaints are handled

Question

Our agenda for the NLP checkpoint is to use the summaries in the data_allegation table to answer the following question:

- Are there differences in the topics from the texts for complaints in which officers were disciplined vs the complaints in which the officers weren't disciplined?

Data

Tables Used
- Columns "crid", "cr_text" from the table data_allegation
- Columns "allegation_id", "disciplined" from the table data_officerallegation

Analysis

We split the complaint text into two parts,

Complaint Reaction	# of Rows
Disciplined	192
Not Disciplined	11106

Table 1: The Split of Disciplined and Not Disciplined cr_texts
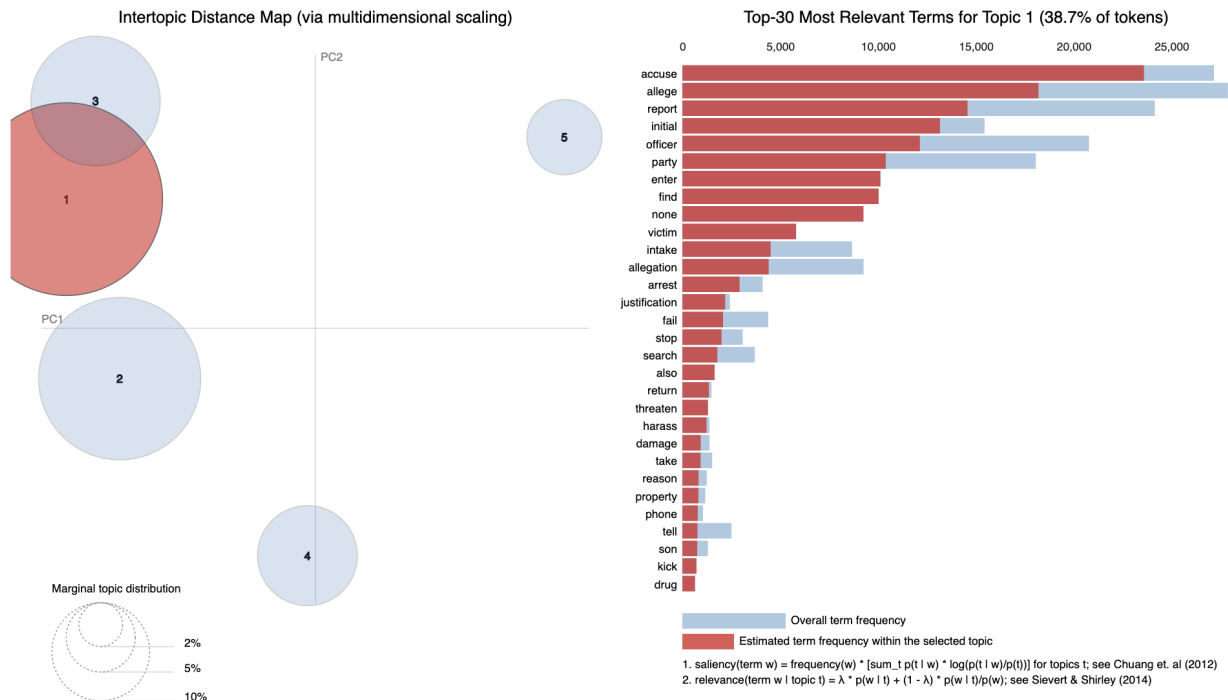
Figure 1: The major topic in the Complaints for which there were Disciplinary Actions
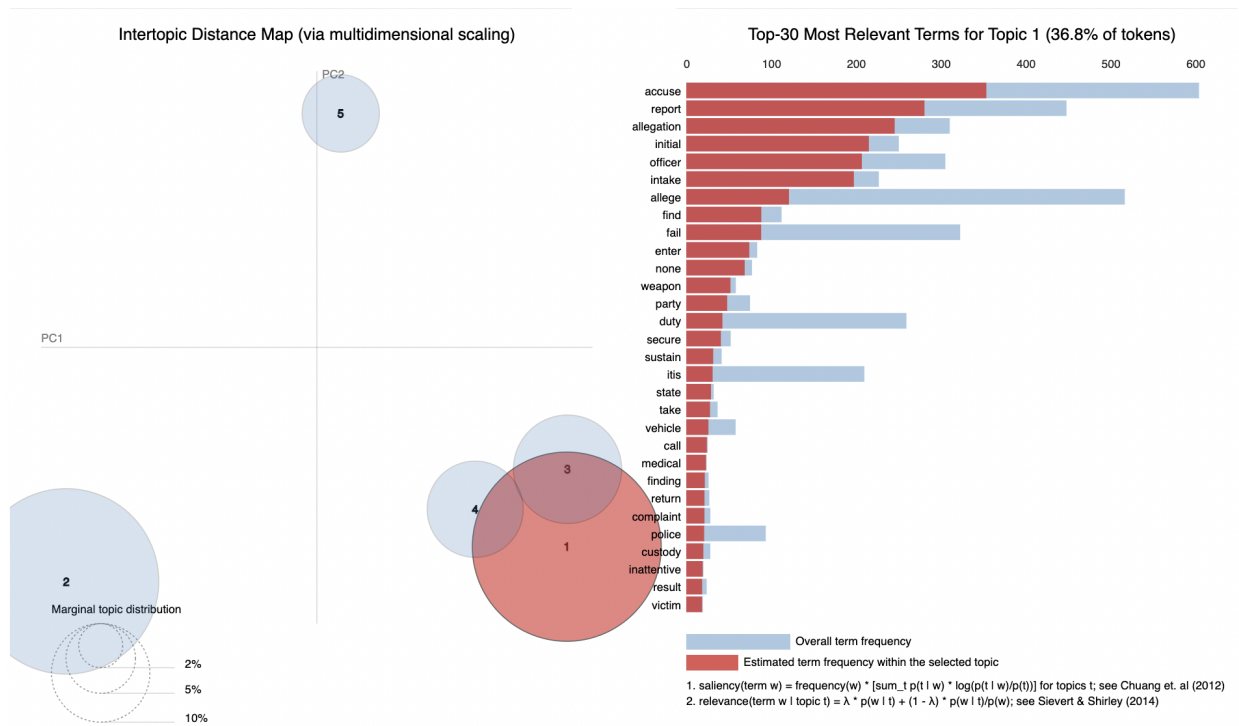

Figure 2: The major topic in the Complaints for which there were Non-Disciplinary Actions

The largest n-grams in the major topics(Topic 1 in both figure 1 and 2) of the text in complaints for both disciplined and non-disciplined officer are

similar. The *topic - officer* and *topic - report* are nearer to the major *topic - accuse* for the text in complaints for disciplined officers whereas the same topics are in opposite quadrants for the text in complaints for non-disciplined officers.

It seems that the alleged, accused and complainant topics are clearly distinguishable for disciplined officers whereas that is not the case for non-disciplined officers. This could mean that the texts of complaints for which officers were disciplined are clear about the above 3 topics but the ones that are not disciplined do not have clear complaint text at least regarding these topics. But we cannot clearly conclude that this has any causation on disciplining the officers.

Conclusion

We have tried to create topics from the summaries of the allegations to try and see any differences between the summaries of the ones that were disciplined vs the ones that were not. The top topics from complaints text (alleged, accused and complainant) for disciplined officers are clearly distinguishable (on the graph) whereas complaints text for non-disciplined officers are not clearly distinguishable.