

Erwin Ma Survival Analysis Writing Sample

Introduction

While working as a Data and Research Analyst at the largest municipal legal defense organization in the US, I led research into prosecutorial practices that could be used to coerce clients into plea negotiations. In New York Criminal Procedure Law Section 180.80, proceedings upon a felony complaint, defendants are guaranteed release from police custody after five days, though some exceptions apply. It has been alleged that the Queens County DA was pressuring clients to waive their speedy trial rights in order to pressure them into plea negotiations. This sample documents that process and was used to release the organization's clients and preserve their constitutional rights to speedy trial.

Executive Summary

- Waivers are implemented on 75% of felony cases in Queens compared to 4% of felony cases in Manhattan, the Bronx, Brooklyn, and Staten Island
- Queens waivers are associated with increased probability that someone remains in pretrial confinement relative to the four other boroughs
- Queens waiver cases have an increased rate of conviction relative to non-waiver cases
- Queens waiver cases are sentenced to longer jail time relative to non-waiver cases
- Queens waiver cases are convicted on higher level dispositions relative to non-waiver cases

Background

The 180.80 speedy trial proceeding is a release mechanism that limits the amount of time that defendants accused of felony crimes remain in custody of the state. However, in Queens county it is the District Attorney's policy to waive the right to speedy trial in order to enter plea negotiations, 75% of felony cases waive speedy trial whereas only 4% of cases in Manhattan, the Bronx, Brooklyn, and Staten Island combined waive. This gives the Queens DA leverage by prolonging defendants' time in pretrial incarceration if bail is not paid. Moreover, cases in Queens that waived speedy trial are more likely to plead guilty, sentenced to longer jail time, and plead to higher charges relative to the other four boroughs in the city and to Queens non-waiver cases.

Methodology

The 180.80 proceeding generally occurs five days after arraignment, and a maximum of seven days to account for holidays and weekends. By examining the scheduled court appearances, we were able to identify cases that waived 180.80 proceedings. Cases that are scheduled seven days after arraignment would be categorized as waiving speedy trial. A sample of these cases were validated with their assigned attorneys.

The duration of pretrial detention was calculated using case appearance dates in the organization's case management system. Calculating the days of detention is quite complex and requires two separate tests: one to check the accuracy of the algorithm which calculates pretrial duration, and the other to check against DOC's inmate lookup to validate the quality of case management system's release dates. Two-sample t-tests suggested that there was no statistically significant difference between the pretrial duration the algorithm produced and the duration calculated by hand ($p=0.22$), nor was there a statistically significant difference between pretrial detention duration in case management system and Department of Corrections (DOC) ($p=0.40$).

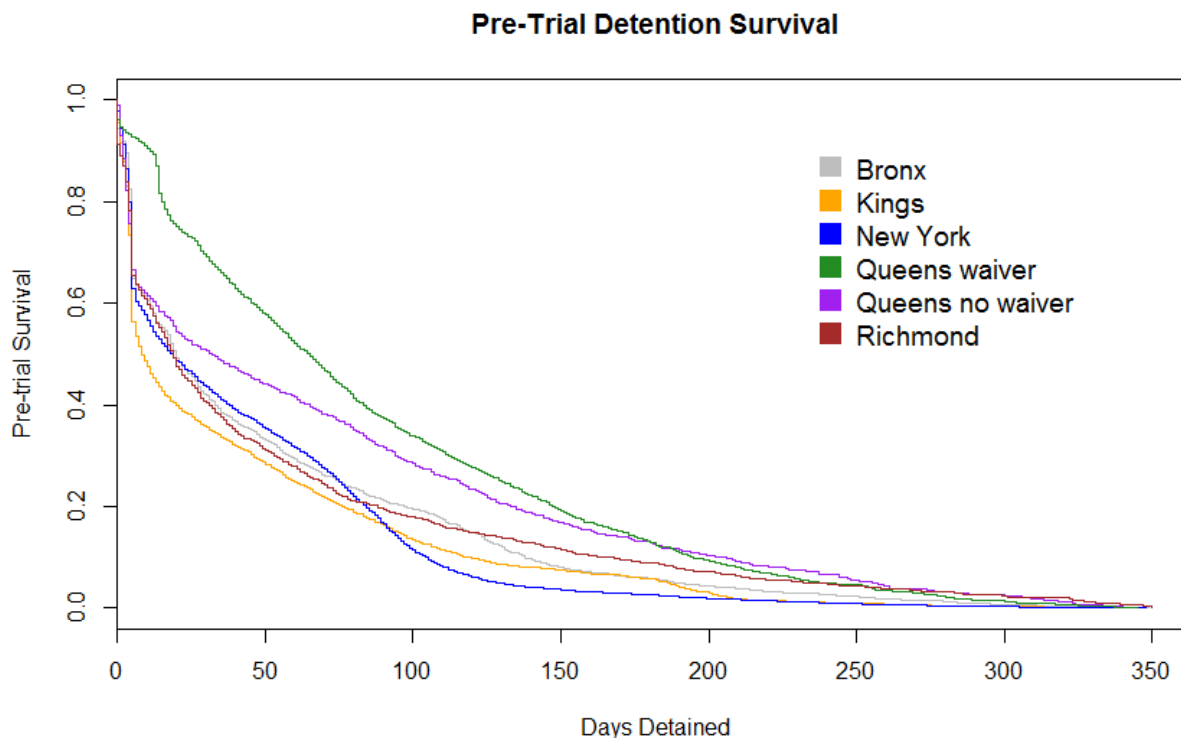
There are still concerns that remain regarding the pretrial duration calculations. The algorithm can only handle consecutive days of incarceration, meaning cases where the defendant had multiple re-entry points would only be able to count the first point of entry through the first point of exit. Another drawback is that DOC's inmate lookup only retains information on clients who have been released from custody for up to 30 days. This puts a time constraint on cases that can be validated with DOC.

The data was limited to felony cases where bail was set at arraignment from January 2014 through December 2018, and where pretrial detention was no more than 370 days in detention. This cutoff was done to minimize possible errors with the algorithm. It is a reasonable assumption that the longer a case remains active, the more complex it will be with multiple reentries into the incarceration.

Survival analysis, with the Survival package in R, was used to demonstrate the effects of the Queens waiver policy on pretrial detention. Typically used for mortality studies in medicine, survival analysis describes subjects in an initial state (in this case incarceration) and the duration to exit that state (i.e., release, paying bail, disposition, etc.). This type of analysis is efficient as it doesn't waste information due to subjects dropping out of the study (e.g., when subjects retain private counsel).

Results

The survival analysis (depicted below) suggests that cases where Queens waived speedy trial are more likely to have the defendant under pretrial incarceration relative to the city's other four boroughs and non-waiver cases in Queens. This higher likelihood occurs throughout almost any time throughout the year. The survival analysis also successfully describes the nature of 180.80 proceedings, where many cases are granted ROR under the guarantee of speedy trial sometime within the first week of arraignment.



The results also largely confirm complaints of the DA's heavy-handed approach. Many staff attorneys complain of the DAs stalling the case, even when no evidence could be put forward to continue to trial. Without the 180.80 release mechanism, defendants' only avenues to regain their liberty is to pay bail or plead guilty. These complaints hold merit; clients in Queens tend to post bail 5 days or later after arraignment, have higher conviction rates, and are more likely to plead to worse charges relative to the four boroughs and non-waiver cases in Queens. These results can be found in the Appendix in Tables 1-3. Furthermore, consequences arise in sentencing, waiver cases in Queens that end with a plea to jail-time are more severe than cases that did not waive, see Figure 1 in the Appendix. This means that total time in jail or the effective sentence (e.g., pretrial, time-served, and jail sentences) are exacerbated (Figure 2).

Appendix

Table 1. Felony Conviction Rates Waivers vs Non-Waivers

Convictions	Queens			4 Boroughs		
Row Labels	no waiver	waiver	Grand Total	no waiver	waiver	Grand Total
PG/Convicted	82.76%	91.34%	89.32%	74.59%	73.27%	74.55%
Dismissed	17.24%	8.66%	10.68%	25.41%	26.73%	25.45%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Sample	1340	4374	5714	29738	1111	30849

*closed cases where bail was set only

Table 2. Release Status Felony Intake 2014-2018

County	ROR at Arraignment	Posted Bail at Arraignment	Released within 5 days	Posted Bail within 5 Days	Released after 5 days	Posted Bail After 5 Days	Detained Never Released
Queens	40.76%	3.61%	0.69%	6.38%	1.23%	12.33%	35.00%
Non-waiver	66.40%	0.64%	1.09%	7.33%	0.64%	2.76%	21.14%
Waiver	0.00%	8.34%	0.05%	4.86%	2.16%	27.54%	57.03%
Bronx	49.18%	4.13%	5.59%	5.61%	1.70%	7.40%	26.39%
Kings	46.06%	3.42%	8.01%	8.41%	1.87%	6.02%	26.21%
New York	34.32%	2.71%	3.85%	9.77%	1.98%	5.76%	41.60%
Richmond	36.75%	9.87%	4.69%	9.89%	1.64%	6.77%	30.39%
Grand Total	41.33%	3.72%	4.73%	8.08%	1.75%	7.38%	33.02%

Table 3. Queens Waiver vs Non-Waiver Case Dispositions

Initial Charge	Non-Waiver Most Common Top Disposition Charge	% of Non Waiver Dispositions	Waiver Most Common Top Disposition Charge	% of Waiver Dispositions	Total Dispositions
ASSAULT 2	DISORDERLY CONDUCT	47 (34.30%)	ASSAULT 3	135 (30.06%)	586
CRIM CONTEMPT 1	CRIM CONTEMPT 2	87 (40.85%)	CRIM CONTEMPT 2	151 (43.02%)	564
CRIM POSS FORGED INSTRUMENT 2	DISORDERLY CONDUCT	15 (33.33%)	CRIM POSS FORGED INSTRUMENT 3	74 (26.43%)	325
BURGLARY 2	DISORDERLY CONDUCT	15 (23.44%)	ATT BURGLARY 2	50 (21.93%)	292
GRAND LARCENY 4	PETIT LARCENY	13 (34.21%)	PETIT LARCENY	98 (41.70%)	273
CRIM POSSESSION OF STOLEN PROPERTY 4	CRIM POSSESSION OF STOLEN PROPERTY 5/PETIT LARCENY	11 (18.64%)	CRIM POSSESSION OF STOLEN PROPERTY 5	47 (22.07%)	272
CRIM SALE CONTROLLED SUBSTANCE 3	CRIM POSSESS CONTROLLED SUBSTANCE 7	15 (30.61%)	CRIM POSSESS CONTROLLED SUBSTANCE 7	112 (52.58%)	262
ROBBERY 2	DISORDERLY CONDUCT	19 (33.93%)	DISORDERLY CONDUCT	37 (18.97%)	251
CRIM POSSESS CONTROLLED SUBSTANCE 3	CRIM POSSESS CONTROLLED SUBSTANCE 7	13 (36.11%)	CRIM POSSESS CONTROLLED SUBSTANCE 7	75 (40.76%)	220
BURGLARY 3	BURGLARY 3	8 (38.10%)	ATT BURGLARY 3	55 (31.43%)	196
ROBBERY 1	DISORDERLY CONDUCT	5 (17.24%)	ATT ROBBERY 2/ROBBERY 1	22 (14.10%)	185
CRIM POSSESSION OF A WEAPON 2	ATT CRIM POSSESSION OF A WEAPON 2	12 (26.67%)	ATT CRIM POSSESSION OF A WEAPON 2	46 (35.93%)	169

Figure 1.

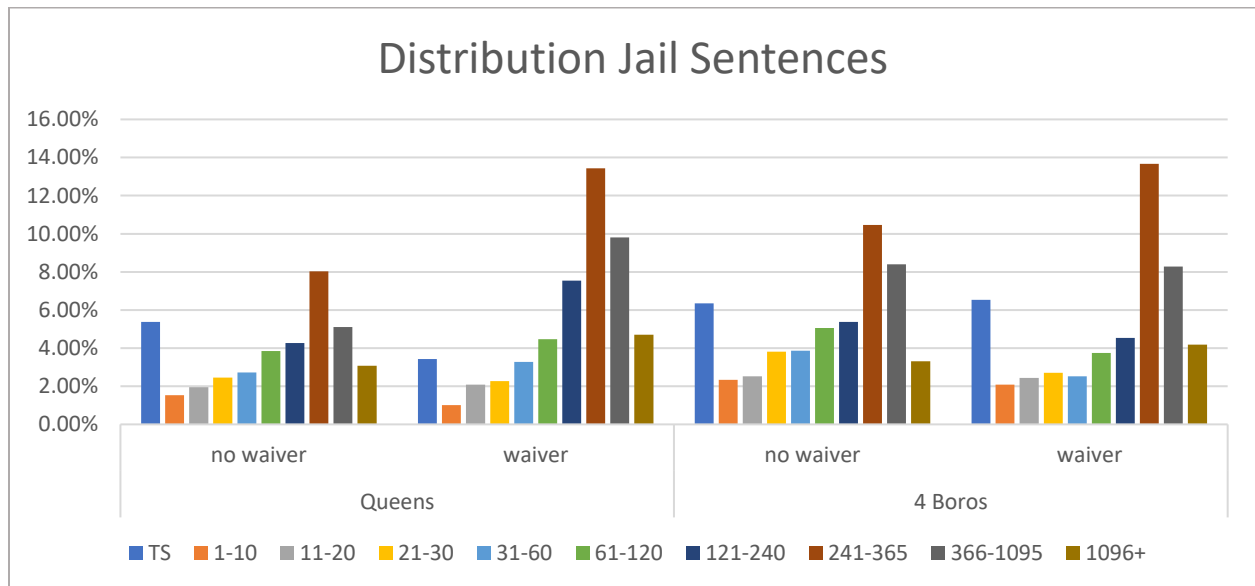


Figure 2.

