

HEC Montréal

An Economic Analysis of Black-White Disparities in
Toronto Police Service's Carding Practice

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Abstract

I study the possible racial bias on the part of police officers in Toronto Police Service's "carding" practice. A behavioural model using outcome tests is presented to provide a framework for measuring bias of the average officer. Prior research has shown that Black individuals face a disparate amount of police pressure in the carding practice. Six years of data from Toronto Police Service's carding and arrests datasets are analysed in this framework. White suspects are found to be slightly less likely than Black suspects to be imminently arrested and/or detained conditional on having been carded within the same calendar month. According to the model used, I interpret this as evidence that officers carding suspects were *on average* not biased against Blacks relative to Whites since Whites were being stopped despite representing a "less productive stop" for an officer. I find suggestive evidence of police bias against Blacks in the show cause decision, as well as suggestive evidence of police bias against "Brown" individuals in the carding decision. Questions regarding the suitability of the outcomes used for measuring officer bias remain a significant caveat to the analysis. Further research is needed.

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1 Introduction

Toronto Police Service’s (TPS) “carding” practice is a policing strategy whereby police record personal information from encounters with persons of interest. Such encounters could result from traffic stops, observations, or “street checks,” a practice involving the stopping and questioning of citizens which has become synonymous with carding in Toronto. As a practice which disproportionately impacts non-whites, particularly those in Toronto’s Black community, carding has drawn allegations of racial bias and public demonstrations against the practice.¹ Similar police practices exist among other police services in the Greater Toronto Area and across North America. Indeed, much comparison has been made between TPS’s carding practice and the New York Police Department’s (NYPD) “stop-and-frisk” program.²

Despite frequent comparison, the two services’ practices are not perfectly analogous; they differ on several fronts. New York’s stop-and-frisk program involved what are more frequently termed “street checks” in Toronto, wherein pedestrians are stopped, questioned and potentially searched by a police officer. Where the purported main purpose of stop-and-frisk was to take guns off the street, the purpose of carding is to collect information that may prove useful in making personal connections when solving crimes. Field Information Reports (FIRs) under TPS’s carding practice may be filled out following street checks, but also following police encounters such as traffic stops or radio calls. In addition, information of “known associates” may be recorded in the TPS data for those individuals who are also present when a primary suspect is stopped. Nevertheless, as one Toronto criminal defense lawyer noted, “anecdotal evidence is overwhelming that the vast majority of people who are carded also get searched to some degree.”³ Thus, the comparison between the two practices remains relevant.

¹See *The Toronto Star* [9]

²Jaffer [10]

³Reid Rusonik quoted in *The Toronto Star*[26]

On November 13, 2017, the Ontario Human Rights Commission launched a public interest inquiry into racial profiling and discrimination against the Black community by the Toronto Police Service (TPS).⁴ Using data from 2010 to 2017, this probe aims to look into TPS's practices involving (i) stops and questioning, (ii) use of force, and (iii) arrests and charges.

This paper examines carding, arrest, detention, releases, and charges data from 2008 to 2013. Rather than contributing to the legal discussion of the practice, the purpose of this examination is to inquire whether the carding practice is racially biased *from the perspective and using the tools of social science*. To this end, I present a theoretical framework that offers a model for the statistical analysis that follows.

Section 2 outlines a game-theoretic model which helps determine which types of statistics can be used to identify the police officer racial bias on average. Using this model, I suppose that bias at the officer level can be identified by looking at the success rate of carding stops. The main outcome used to measure the success of a carding stop is the arrest rate. However, given concerns over the suitability of using an arrest as a measure of effective policing, I supplement the analysis to look at detention and show cause rates as well. My presumption is that each of these rates would, in theory, require a more compelling reason for execution than would an arrest.

A main limitation in the analysis pertains the the suitability of using arrest, detention, and show cause rates as measures of success in a hit rates test for officer bias. As decisions made by officers they may be subject to the same bias that affects the carding decision. As such, these outcomes do not represent an ideal measure of an “objective” outcome. This limitation and others related to assumptions and inconsistencies in the analysis are presented, along with a review of the data used, in Section 3.

⁴See OHRC [1]

In Section 4, I analyse the incidence of stops among different racial groups and, consistent with previous analyses, conclude that Blacks are stopped disproportionately more frequently than Whites. However, I do not rule out unobservable factors such as socioeconomic differences, as opposed to officer bias, in accounting for this disparity. Using the TPS data, I find negative identification of police officer bias against Blacks, noting that arrest, detention, and show cause hearing rates are higher for Blacks than Whites. According to the model used, I interpret this as evidence that officers carding suspects were *on average* not biased against Blacks relative to Whites since Whites were being stopped despite representing a “less productive stop” for an officer. This analysis is presented in Section 5.

In Section 6, I address extensions of the results and present supplementary robustness analyses. Section 6.2 presents suggestive evidence of a slight officer bias against persons who are recorded as having “Brown” skin colour, though I defer conclusions to further study. Section 6.8 discusses the suitability of arrests, detentions, and show cause hearings as outcomes for hit rates analysis by presenting a separate analysis conditioning these outcomes on the suspect’s recorded type of crime. One extension meriting further study examines possible racial bias in the decision to call a suspect to a show cause hearing controlling for crime type. I find tentative evidence suggestive of police bias against Blacks in the show cause decision but recommend further study.

1.1 The Carding Interaction

In Toronto, “carding,” alternately known as “Community Engagements” and the “Community Contacts Policy,” refers to an intelligence gathering practice of the Toronto Police Service that involves the stopping, questioning, and documenting of individuals’ personal information when no particular criminal investigation is underway. The purported aim of carding is to create a database for reference in future crime-solving [14].

The carded person’s information is recorded into “Field Information Reports” and includes information indicating, *inter alia*, the person’s race, age, and gender. The location of the interaction, as well as identifying information of known associates is also recorded in the Field Information Report. In common parlance, carding has become synonymous with a subset of its applications known as “street checks,” wherein police stop and question pedestrians. The extent of the carding practice, however, is more broadly applied than through street checks alone, and it can include any instance in which an individual’s personal information is recorded into the FIR database.

To understand the scenarios in which carding may take place, we can consider the example of a Toronto man who was carded at least 32 times between 2008 and 2012. Of the 32 recorded stops, 16 were for vehicle or vehicle-related stops and 11 were for “general investigation,” or street checks [24].⁵ Regardless of the specific nature of contact between the officer and the individual in a carding interaction, in each case the individual was stopped, questioned, and their personal information was recorded into the FIR database.⁶

Given the nature of the interaction with police, the carding practice has drawn much comparison with “stop-and-frisk” practices in the United States. Both practices involve the stopping and questioning of civilians, and anecdotal evidence indicates that, as in stop-and-frisk, searches occur frequently in carding interactions.⁷ Civilian concerns over racial profiling and protection against unreasonable searches or seizures have been voiced in opposition to stop-and-frisk and carding alike.⁸ For their part, the officers involved in a carding

⁵After a review of recorded natures of contact for carding interactions, I infer stops for which “general investigation” is recorded as the nature of contact to refer to street checks.

⁶Exceptions to this are limited. In the FIR database, there is a small percentage (Fewer than 0.4%) of stops where the individual in question was “observed but not spoken to”.

⁷In a 2014 article [10], Emma Rhodes of the Canadian Council of Criminal Defense Lawyers is quoted as stating that “rates of carding are highest in racialized communities, and these youth report that they are often searched during these stops and that they feel criminalized by the process.”

⁸Though operating under separate jurisdictions, the constitutions of the United States and Canada provide substantially the same protections in these regards. The Fourth Amendment protects Americans from unreasonable searches and seizures; Section 8 of the Canadian Charter of Rights and Freedoms does the same for Canadians. Section 9 of the *Charter* protects Canadians against arbitrary detention or imprisonment. The

stop, as in stop-and-frisk, decide whether to stop and question an individual and whether to record their identifying information in a police database. According to a joint statement on the practice of carding on behalf of the Toronto Police Service and the Toronto Police Services Board [29], an officer involved in a carding interaction “shall consider the potential value of initiating or recording a contact versus the potential value of the individual’s right to be left alone.” Given the similarities between carding and stop-and-frisk practices, I use an outcome test model that has heretofore been used to measure officer bias in stop-and-frisk decisions, that takes into account the officer’s arbitration in this regard.

1.2 Related Literature

While much academic writing has been dedicated to identifying bias in stop-and-frisk practices in the United States, less has been devoted to similar practices in Canada. This paper borrows from studies conducted on the American practice, adapting concepts to TPS’s particular practice in order to address this gap. Coviello and Persico’s [6] analysis of NYPD stop-and-frisk data from 2003 to 2012 presents a two-tiered model that identifies racial bias at the police chief- and police officer-level. This paper adapts the officer-level of their model, first introduced by Knowles *et al.* [11], which examines arrest rates (hit rates) as a measure for officer bias and controls for precinct-level fixed effects, to Toronto’s carding practice. An analysis similar to theirs and executed by Gelman *et al.*[7] focuses on racial disparities in stops, but also presents an arrest rate-based outcome framework for identifying police bias similar to that used in this analysis. I extend the hit rate analysis to include detentions and calls for show cause hearings in addition to arrests.

The model used in Anwar and Fang [2] differs from that of Knowles *et al.* [11] by acknowledg-

Equal Protection Clause of the Fourteenth Amendment guarantees to every American the equal protection of the laws and prohibits intentional discrimination based on race; Section 15 of the *Charter* guarantees to every Canadian equal protection and benefit of the law without discrimination based on race.

ing the possibility that police behaviour may not be *monolithic*.⁹ They present an alternative model for hit rates analysis using traffic stop data and information on officer’s race, and reject the hypothesis that officers of different races are monolithic in their behaviour. To consider a non-monolithic police carding scenario, I supplement the model of Coviello and Persico [6] with an additional specification controlling for officer rank fixed effects and, in Section 6.9, include a supplementary analysis with a restricted sample of officers who have achieved the rank of “officer-in-charge”.

Rankin *et al.* published a series of articles with *The Toronto Star* under the title “Known to Police.” This investigation found a disparate impact of police pressure on Black- and “Brown”-skinned people of the carding practice in Toronto for the period from 2008 to 2013 using census benchmark comparisons with the general population.

Meng *et al.* [17] examines data on carding stops in Toronto for youth (aged 15 to 29) and finds evidence suggesting “that because of racial profiling, Black youth are subject to disproportionately more stops for gun-, traffic-, drug-, and suspicious activity-related reasons.” Using stop and crime data from 2003 to 2012, Meng [16] examines whether stops in Toronto are more likely to lead to arrests for Black and White youth (those between the ages of 15 and 24) and concludes that “members of the city’s police force are susceptible to racially biased policing in neighbourhoods dominated by White residents and/or having high crime rates.”¹⁰ This paper extends the sample to include individuals not categorized as youth and examines success rates using individual stops and arrests. Under this framework, I find that police officers decide whom to card in a manner absent of racial bias against Blacks across patrol zones *at least on average*.

Knowles *et al.* [11] derived Theorem 1 and introduced the model outlined in Coviello and

⁹In this context, monolithic police behaviour would refer to the scenario in which all officers search suspects of a given race at the same rate.

¹⁰Meng 2017[16]

Persico’s [6] Appendix A. The hit rates analysis has also been used by Persico and Todd [20], Persico and Todd [22], and Childers [5] in the context of measuring racial bias in vehicle searches. Gershmann [8], Gelman *et al.* [7], Lehrer and Lepage [13] and Lehrer and Lepage [12], along with Coviello and Persico [6] use the hit rates analysis in the context of stop-and-frisk practices. As the TPS practice of carding from 2008 to 2013 involved recording information in the same database whether the encounter was through a traffic stop or a street check, I introduce a combined analysis which includes both types of encounter. Mechoulan and Sahuguet [15] use the outcome-test methodology to assess racial disparities in the parole release decision. Persico [19] and Persico and Todd [21] use the hit rates analysis to measure official bias in other forms. Simoiu *et al.* [28] critique the problem of infra-marginality¹¹ in outcome tests and propose threshold tests as an alternative.¹²

2 The Model

This analysis uses an adaptation of the officer bias model based on outcomes presented in Coviello & Persico [6]. As Toronto Police Service’s carding practice differs from NYPD’s stop-and-frisk practice, the model in this paper diverges from that of Coviello & Persico [6] in an important way. In NYPD data a stop is recorded and if a frisk and/or arrest results from this stop it is input into the same register. TPS data is presented in separate datasets (for carding, arrests, detentions, etc.) and, critically, if an arrest is made, the arrest information is recorded whereas a field information report is not. The TPS datasets are described in greater detail in Section 3.

¹¹Infra-marginality refers to the problem that arises when outcome tests are able to measure the *average* outcome, but not the *marginal* outcome. Lower average hit rates for minorities, for example, would not necessarily prove that the marginal expected hit rate (or threshold) is lower for non-minorities. For a detailed explanation see Ayres [3].

¹²Note: The model presented in this paper addresses the problem of infra-marginality through an economic model of personal behaviour wherein suspects balance their utility of committing a crime with the risk of getting caught, and officers the utility of making an arrest with the cost of searching. This is further explained in Section 2. For further explanation see Knowles *et al.* [11]

The model in Coviello & Persico [6] considers a productive stop one in which an arrest (or summons) is made. Since TPS does not record carding information if an arrest is made, however, this analysis considers a productive carding interaction one which collects information leading to an *imminent arrest*, which is to say, an arrest within the same calendar month. This approach is expounded in Section 3. Critically, using arrests as an outcome for hit rates analysis is problematic, since arrests do not represent an “objective” measure untainted by police bias. To narrow the gap toward a more objective measure, I introduce two outcomes to the analysis, which, though also affected by police bias, require, theoretically at least, a higher standard of proof.

This paper additionally adds two supplementary outcomes to the analysis: detention and show cause. A detention occurs when an arrested person is held in custody at a police station. If the detention is to exceed 24 hours, the police must “show cause,” which is to say, justify the extended detention in front of a judge. In general, a detention can be seen as an outcome for an arrest made for more serious crimes, and a show cause hearing as an outcome for the more serious of these. These outcomes are chosen as measures of a “productive” stop since they represent, like an arrest, police work that is effective, at least theoretically, at reducing crime.

The model has two kinds of agents: citizens of race $r \in \{B, W\}$ observed in patrol zone i , who choose whether to commit a crime, information of which may be detected through a carding interaction; and a mass of P police officers who card citizens and record their information.¹³ Like Becker [4] and in keeping with previous literature, I define police bias as

¹³The model, as presented in Coviello and Persico [6], is summarized as follows. The individual who commits a crime has an expected payoff given by:

$$u_{r,c}(v, j, \sigma) = v - j \cdot \frac{\sigma}{N^{r,c}}$$

where v represents the value of committing a crime, j denotes the cost of being detected, σ denotes the expected number of the suspect’s group members who are searched, and $N^{r,c}$ denotes the number of individuals belonging to group (r, c) .

a “taste for discrimination.” In this analysis, this taste for discrimination is represented by a component of an agent’s utility function that is dependent on the race of those with whom the agent interacts.¹⁴ As in Coviello & Persico [6], the main specifications of this model assume that officers inherit the bias of the patrol zone.¹⁵

2.1 Identifying Officer Bias

The model presents itself as a game with one stage.¹⁶ The analysis adapts that presented in Persico & Todd [20] to TPS’s particular carding practice and considers the success rate of carding interactions as an indicator of officer bias. I define a “successful” stop as one in which information leading to an imminent arrest (and/or detention and/or show cause hearing) is collected. The logic of this relationship is presented in the following example. Supposing a model with two races, r and r' , and a lower success rate for race r , an officer who is not biased against race r and is motivated by the prospect of making an arrest should reduce the number of the less productive carding stops of persons of race r and increase the more productive carding of persons of race r' . In the model, the individual officer’s arbitrage aggregates: as officers card more persons of race r' , the crime rate in r rises and the crime rate among r' decreases. This arbitrage continues until the police force is perfectly

The expected payoff to an officer is given by:

$$\sum_{r,c} S_p(r,c)[y_p^r \cdot K^{r,c}(S(P,r,c)) - t_p]$$

where $S_p(r,c)$ denotes the number of stops that officer p decides to devote to group (r,c) , y_p^r denotes the officer’s perceived benefit from apprehending someone of race r , $K^{r,c}$ denotes the fraction of suspects who will imminently commit a crime, $S(P,r,c)$ denotes the aggregate behaviour of all police officers, and t_p denotes the officer’s cost of searching. For greater detail on the model, see Appendix A of Coviello and Persico [6]. To see that a Nash equilibrium exists for this game see Persico and Todd [20].

¹⁴When the benefit to an officer p of obtaining information leading to an arrest of a criminal of race W is y_p^W and the benefit of finding a criminal of race B is $y_p^B = y_p^W + \beta(p)$ where $\beta(p)$ is equal to the bias against race B . [6]

¹⁵Analyses including officer rank fixed effects (Columns (8) in each table) assume that officers *of a given rank* inherit the bias of their patrol zone.

¹⁶For a proof of Theorem 1 and a more extensive explanation of the model, see Appendix A in Coviello & Persico [6], which details “The Theory of Pedestrian and Officer Behavior, and a Test for Officer Bias.”

unbiased¹⁷ as arrest rates, detention rates, and show cause rates are equalized between the carding interactions of persons of race r and r' in the patrol zone. If the police force is biased, the model would indicate that this arbitrage stops earlier, at a level where the differential between the arrest rates for races r and r' is offset by a measure exactly equal to the officer's bias. This logic leads to the result presented in Theorem 1, which provides the justification for the hit rates test applied in this analysis.

“Theorem 1 (Persico & Todd (2006): positive result on identification of police officer bias) *In the equilibrium of the precinct-level game, the arrest rate is the same across all subgroups within a race that are distinguishable by police. Also, if the police are unbiased, then the arrest rate is the same across races. If the police are biased against race r , the arrest rate is lower in race r than in the other race. Thus officer bias can be identified using arrest rates.*”¹⁸

The Toronto Police Service is organized into 17 divisions, which are each further divided into patrol zones. The analysis in this paper adapts the precinct-level game of Coviello and Persico [6] to the level of the patrol zone in Toronto. The reason for this is twofold. First, TPS carding data is recorded by patrol zone and, as the area of measure, is an appropriate level for analysis. Second, each TPS division may contain within it several neighbourhoods and patrol zones that are highly differentiated in terms of demographic makeup. As such, patrol zones represent a more appropriate control for statistical analysis.

In addition to arrest rates, this analysis extends the success rates of the model to include detention rates and show cause rates. As such, Theorem 1 would suggest that if police are biased against race r , the detention rate and show cause rate are lower in race r than in the other race.

¹⁷This refers to the police force being unbiased at the individual officer level. It does not refer to other levels of possible bias, such as the distribution of the officers themselves.

¹⁸Excerpt from Coviello & Persico [6]

3 The Data

I use data collected by the TPS on individual stops or observations in the City of Toronto between 2008 and 2013. The main database was compiled using several datasets pertaining to: Field Information Reports (FIR), FIROFFICER, Arrests, Detentions, and Releases.

The FIR dataset contains information on the carding interaction and personal information of the suspect. Information on the carding interaction includes the date and time of contact, area (patrol zone) of contact, nature of contact, and a contact ID for each interaction (which may involve 1 or more individuals). Personal information recorded in the FIR database includes the individual's age, sex, birthplace, skin colour,¹⁹ month and year of birth, home patrol zone, home city as well as a randomly generated unique identification number.

The FIROFFICER dataset contains information on the police officers who recorded each Field Information Report. This information includes their platoon, unit, and rank.

The Arrests dataset contains information on the type of arrest (appear notice, arrest, bench warrant, provincial offence ticket, summons, or warrant in the first), month and year of arrest, and a randomly generated unique identification number for each arrest. It also contains personal information such as the suspect's birth city, birth country, immigration status, month and year of immigration, employment status, sex, skin colour,²⁰ age, month and year of birth, and the individual's unique identification number.

The Detentions dataset contains the unique identification number of the arrest and the reason for detention. If an individual is detained, this means that the individual was brought in and held at a police station. Reasons for detention are classified as being either for

¹⁹Skin Colour is divided into 4 categories: Black, Brown, Other, White

²⁰The Arrests dataset adds a fifth skin colour category: "Unknown"

identification purposes, held on behalf of an outside police agency awaiting pickup, individual was intoxicated, “show cause,” or other (refers to otherwise unlisted reasons). A detention reason of show cause indicates that the “investigator(s) involved have identified reasons to believe the individual is a risk to be released and should be held.” If a suspect is to be held for longer than 24 hours, police are required to “show cause” for the extended detention. The Releases dataset contains the unique identification number of the arrest, the month and year of the release, and the reason for release.²¹

Unless explicitly mentioned, I restrict the sample to Black and White individuals, setting “Brown” and “Other” aside since the charge of racial bias seems to have been particularly raised with respect to the Black community.²² In this restricted sample of 1,305,705 stops, approximately 5 percent of the carding interactions led to imminent arrests and approximately 32 percent of the carding stops were of Blacks, the rest of Whites. Most of the reasons given for the nature of the carding interaction fall into one of the following categories: General Investigation (37%); Radio Call (20%); Traffic stop (15%); Vehicle Related (4.6%); Loitering (3.6%). Table 1 reports descriptive statistics.

General investigation is, by a significant margin, the most frequently cited reason for recorded nature of contact. In comparison with the other listed reasons, I infer “general investigation” to be most commonly cited for street checks. As a vaguely described nature of contact, stops under this category raise concern of arbitrary decision making on the part of individual officers. To delve into racial disparities in this subset of stops, I replicate the main analysis to a sample restricted to these stops in Section 6.6.

Since a radio call indicates that a citizen reported an issue to police, race disparities in carding resulting from a radio call could be more indicative of a citizen’s bias than a police

²¹Release reasons are described in Table B.4 of Appendix B

²²Rankin *et al.* [27]

Table 1: Descriptive Statistics

	Mean	sd	n
<i>Outcomes</i>			
Arrest Resulting From Stop	5.4	23	1,350,705
Detained – Resulting from Stop	1.7	13	1,350,705
Show Cause – Resulting from Stop	84	37	23,287
<i>Race of Suspect</i>			
Black	32	47	1,350,705
<i>Recorded Nature of Contact</i>			
General Investigation	37	48	1,350,704
Radio Call	20	40	1,350,704
Traffic Stop	15	36	1,350,704
Vehicle Related	4.6	21	1,350,704
Loitering	3.6	19	1,350,704
Liquor Licence Act	2.8	16	1,350,704
Squeegee Kid/Panhandler/Strt Person	2	14	1,350,704
Drug Related	1.9	14	1,350,704
Traffic Stop Caution	1.8	13	1,350,704
Trespassing	1.6	12	1,350,704
EDP Related	1.4	12	1,350,704
Dispute (Non-Domestic)	1.4	12	1,350,704
TTC Related	1.2	11	1,350,704
Shoplifting	0.92	9.5	1,350,704
Bail Compliance Check-No Violation	0.91	9.5	1,350,704
Suspicious Activity	0.89	9.4	1,350,704

Notes: Variables expressed in percent. *Black* is an indicator variable coding the suspect's race. *Nature of Contact* are 16 indicators of the reason the suspect was engaged in contact with police and represent 96% of the carding interactions recorded in the sample. Source: Toronto Police Service's FIR Dataset, Years 2008-2013.

officer’s. However, once on the scene, the decision of whether to record the suspect’s personal information rests with the police officer. For this reason, observations with “Radio Call” listed as the nature of contact are included in the analysis. Nevertheless, the analysis was replicated for robustness using a sample that excludes observations that list “Radio Call” as the nature of contact, with results shown in Appendix A.

The main database was created by merging the FIR, Arrests, Detentions, Releases, and FIROFFICER datasets. The Arrests, Detentions, and Releases datasets were merged by the unique identification number for each arrest.²³ This combined dataset was then merged to the FIR dataset using the individual’s unique identification number. The FIROFFICER dataset was then merged to the main database using the contact identifier for each contact card.

In the FIROFFICER dataset, a categorical variable coding the rank of the highest ranking officer on each carding stop was created. This variable includes 5 ranks²⁴ which combined account for about 94 % of all carding stops. As there may be multiple officers per stop, this variable was applied to each officer in the interaction. To facilitate data merger, encounter duplicates²⁵ were then dropped while ensuring that each observation retained the rank of the highest ranking officer present at the encounter.

Merging the FIR dataset to the others posed two main challenges. Firstly, an individual can be carded and/or arrested many times. To address this challenge and to create a database that allows for comparison to the NYPD’s stop-and-frisk database, the FIR dataset was merged to the combined Arrests, Detentions, and Releases dataset matching by the individual’s unique identification number, the date of arrest (monthly), and the date of contact

²³The Releases dataset had a small number of duplicates in the unique identification number. These observations were dropped prior to merger.

²⁴These include ranks for PC/PC1, PC2, PC3, PC4, SGT. See Appendix B for documentation.

²⁵Coded by the variable CONTACTID.

(date and time variable transformed into a monthly variable).

Secondly, an individual can be carded and/or arrested many times within the same month. To address this, the FIR dataset was pre-emptively ordered by individual's unique identification number and the date and time of contact, whereupon a sequential variable sorted by unique identification number and month of contact was created. Thus, the datasets were merged by unique identification number, the matching date variables, as well as the sequential variable in the case where an individual was carded and/or arrested more than once in a given month.

Thus, where an individual is carded and/or arrested more than once in a given month, the first stop is matched with the first arrest, the second stop with the second arrest, and so forth. Where an individual is carded only once but arrested more than once in a given month, the carding stop is paired with the first arrest. Where an individual is carded many times but arrested only once in a given month, only the first stop is paired with the arrest.

In this analysis, I use the term “arrest” in the broad sense that is presented in the TPS data. Using this nomenclature, an “Arrest Made” can refer to an arrest, a provincial offence ticket, an appear notice, warrant in the 1st, a summons, or a bench warrant. I include each of these arrest types in the hit rates analysis since, according to the framework of the model, each can be seen as a “productive” outcome from the officer's point of view.²⁶

The analysis presented in Section 6.8 includes charges data and therefore involves a separately produced database. Any one arrest may result in multiple charges which fall into one of 38 categories. Moreover, any single arrest may produce multiple charges within the same category. To merge the Charges dataset with the FIR, FIROFFICER, Arrests, Detentions,

²⁶Certainly, the disparity in severity between some of these categories raises questions of proportionality in the value of a carding stop. A carding stop would seem a disproportionate intervention, for example, to later arrest or ticket someone for a minor offense. I leave further analysis on this front for future research.

and Releases datasets, the Charges dataset was cleaned so as to include only one charge per charge category per arrest.

3.1 Caveats

For this analysis, I assume that information gathered through a carding stop indeed provides information valuable and necessary for a later arrest to be made. This is a strong assumption, since an arrest can very plausibly be made without any prior information. However, given the data collection practices of Toronto Police Service and since I do not have data on when an officer consults the FIR database when attempting an arrest, this assumption is necessary if I am to measure police bias in carding through outcome tests.

In addition, the matching process used in the preparation of the main dataset does not allow for the potentiality wherein the information leading to an arrest was gathered in two or more carding interactions. To understand this issue, we must differentiate between the concepts of information *gathered* and information *recorded*. An officer may gather myriad pieces of information from an interaction with a suspect that are not easily recorded, but will only record information that helps to identify a suspect or their known associates. The available datasets only include the data recorded. Since we cannot know from the data whether an arrest is facilitated by outside information not recorded in the datasets, I assume that information leading to an imminent arrest is obtained in or facilitated by the matching carding stop. For the remainder of this paper, data collected or gathered refers to data recorded in the datasets.

As only monthly date variables were provided in the Arrests, Detentions, and Releases datasets, a possible caveat in these data arises since we cannot know for certain which carding interaction provided information leading to which arrest. For this analysis, I assume

that the original order of the raw Arrests dataset sorted the arrest data chronologically within months. Nevertheless, for completeness, in Appendix A, I construct a sample which excludes individuals who were stopped or arrested multiple times within a month, and I replicate the analysis on that sample. The results of that analysis resemble those found using the main database.

Another caveat in the data could arise since, given the nature of carding in Toronto, an arrest may lead to a carding stop, as opposed to the opposite. While this potentiality cannot be accounted for entirely, to address the circumstance where a stop was bail-related (indicating that a carding stop would have occurred after an arrest), the dummy variables created to measure stop outcomes exclude cases where the nature of contact is bail-related.

Another caveat must be raised regarding the suitability of arrests as an outcome for hit rates analysis.²⁷ As arrests themselves are subject to police bias, they may not be an “objective” measure of the productivity of a carding stop. That is, all else equal, a police officer may be more likely to arrest a Black than a White individual after having carded either. To the same end, this caveat can apply to detention and show cause rates. This issue is further addressed in Section 6. Relying on calls for show cause hearings as a measure of success is additionally problematic since a successful show cause hearing (i.e. one which is confirmed by a judge) could be a measure of a productive stop, but a call for show cause hearing that is not confirmed may be a further indication of officer bias. This uncertainty is explored in Section 6.

Finally, the method for data collection in a carding interaction could contribute to the existence of a self-selecting sample. To understand this, it is worth noting that in a number of carding settings (for example, when the individual in question is not driving a motorized vehicle or violating the law), the individual is not required by law to produce government

²⁷This same limitation was raised in Coviello & Persico [6]

identification. In these circumstances, the carded person could provide the officer with false information. For example, upon being stopped by police, a pedestrian may give the officer the name of someone else, or a false name altogether. Such entries could detract from the accuracy of the matching method used in this analysis. A false entry in the FIR dataset could go unmatched to what would have been its proper counterpart in the other datasets in the scenario where accurate information were provided or it could be incorrectly matched to an entry corresponding to the false information given. With that said, I estimate the number of these false entries to make up a small percentage of the total.²⁸

3.2 Discrepancies in The Data

Additional steps were taken to address inconsistencies and discrepancies within and between the initial datasets. An important discrepancy is that the same individual may be recorded as having a different skin colour from one stop to the next. As the purpose of this analysis is to identify sources of police bias by comparing results among individuals, this discrepancy could impact results. This was addressed by finding the most commonly entered skin colour for a given individual and setting divergent entries equal to the most common entry. If no recorded skin colour is most common, the observations were dropped. Further, if no skin colour is recorded, the observations were dropped.

To address the possibility that multiple individuals were assigned the same identification number, observations were dropped if multiple instances of the same unique identification number contained inconsistent information for identifying variables, such as date of birth and sex.

²⁸Estimates from past researchers put the number of false entries at fewer than 5% of the total.

4 Disparities in Police Pressure

Toronto Police Service’s carding practice disproportionately impacts visible minorities, particularly young men. *The Toronto Star*’s investigative analysis of the practice makes this point by documenting, in 2012, that “the number of carded young black men between 2008 and mid-2011 was 3.4 times higher than the young black male population. The ratio for young brown men was 1.8:1, and for young white men and those considered “other,” the ratios dropped to 1:1 and 0.3:1 respectively.”²⁹ This analysis confirms the disparities found by *The Toronto Star*, noting that Blacks make up 25 percent of those carded despite accounting for only 8 percent of Toronto’s population.

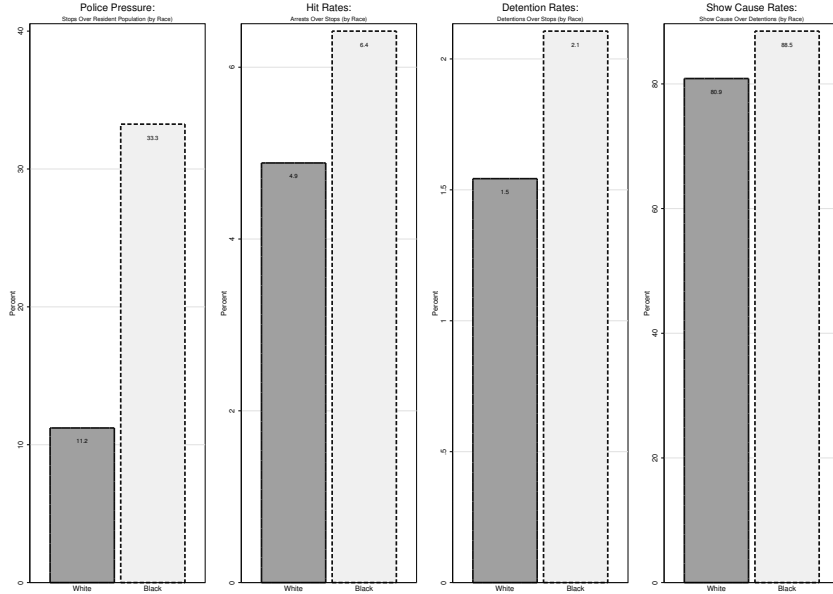
Figure 1 (left panel) summarizes this disparity in *police pressure* by race of the individual carded, after restricting the sample to Blacks and Whites. For each race, police pressure is defined as the average number of stops in a year divided by total population in Toronto. In the whole sample, police pressure is about three times greater for Blacks than it is for Whites.

As established in *The Toronto Star*’s report, such disparities in impact are socially problematic. Coviello and Persico [6] note, however, that this disparate impact can be a reflection of many factors, whether observable or not, that affect the carding process.³⁰ Critically, Theorem 1 does not allow us to infer that police pressure identifies police bias. Instead I look to the analysis of outcomes, such as arrest, detention, and show cause rates, to identify possible officer bias.

²⁹Rankin and Winsa [25]

³⁰Coviello and Persico [6]

Figure 1: Police Pressure and Outcome Rates in Toronto



Notes: The figure reports the yearly average number of carding stops over resident population (1st panel), the yearly average arrests over yearly average stops (2nd panel), the yearly average detentions over yearly average stops (3rd panel), and the yearly average calls for show cause hearings over the yearly average detentions separated by skin colour in Toronto (in %).
 Source: Toronto Police Service FIR and Detentions datasets, Years 2008-2013. Resident population from 2011 census data.

5 Analysis of Arrest, Detention, and Show Cause Rates

Theorem 1 stipulates that a comparison of outcomes by race can identify whether bias exists in a police carding decision. As such, this section addresses TPS arrest, detention, and show cause rates for comparison between Blacks and Whites.

The probability that a carding stop of a Black individual leads to an imminent arrest is within approximately 1.5 percentage points of the probability for a White individual. This is demonstrated by regressing an indicator variable coding whether an individual was arrested conditional on having been carded on another indicator variable coding the individual’s race. Considering this percentage point difference is on a base arrest rate of 4.9% for Whites, the difference between the two rates is striking.³¹ The second panel of Figure 1 shows the

³¹Percentage point differences for supplementary analyses for arrests made are based on mean arrest rates

aggregate hit rates for carded individuals of both races. Comparing the first and second panels shows that the vast disparity of police pressure across races is diminished when looking at average arrest rates.

More detailed estimates are shown in Table 2. Depending on the model, Black individuals who are carded are between 1.53 and 1.571 percentage points more likely to be arrested compared to Whites. Thus, the probability of a carding stop leading to an arrest is approximately 4.9% for Whites versus 6.4% for Blacks. While the difference is arguably small enough to be imperceptible to an individual officer, this represents a significant difference in arrest rates. Further, this difference is statistically significant in each specification.

Table 2: Arrest Made

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.535*** (0.042)	1.531*** (0.042)	1.531*** (0.110)	1.570*** (0.044)	1.571*** (0.044)	1.571*** (0.089)	1.569*** (0.089)	1.550*** (0.044)
Observations	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705
Prob. of Arrest				5.379%				
Prob. of Arrest Whites				4.885%				
Fraction of Black				0.322				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's race. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008-2013.

Table 3 shows the estimates for detention rates. Depending on the specification, Blacks who are carded are between 0.56 and 0.66 percentage points more likely to be detained than are Whites over a base detention rate of 1.5% for Whites. The probability of a carding stop leading to a detention is approximately 1.5% for Whites compared to 2.1% for Blacks. The proportional effect of this difference is fairly substantial and the coefficients are statistically significant. These estimates are similar to the base arrest rate found here. For exact figures, refer to the corresponding table. This also applies for supplementary analyses related to detention and show cause rates.

significant in each specification. However, base rates for each race are low enough that the difference is unlikely to be perceived by an individual officer in his own interactions.

Table 3: Detained

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.564*** (0.024)	0.561*** (0.024)	0.561*** (0.057)	0.656*** (0.025)	0.658*** (0.025)	0.658*** (0.049)	0.654*** (0.048)	0.644*** (0.025)
Observations	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705	1,350,705
Prob. of Detention				1.724%				
Prob. of Detention Whites				1.543%				
Fraction of Black				0.322				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on having been carded in Toronto within the same month (in %). Black is an indicator variable coding the suspect's race. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER and Detentions datasets, Years 2008-2013.

Table 4 shows the estimates for show cause rates. Depending on the specification, Blacks are between 6.69 and 7.61 percentage points more likely to be called for a show cause hearing conditional on being detained. This percentage points difference occurs over a base show cause rate of 80.86% for Whites. While the sample size of show cause hearings conditional on carding stops is much smaller than that used for detentions and arrests, the difference in show cause rates among whites and Blacks is striking and statistically significant across specifications.

Critically, these differences in outcome rate – whether pertaining to arrest, detention, or show cause – are consistent when controlling for patrol zone, precluding a possible fallacy of aggregation in the data. As Figure 2 shows, patrol zones may vary considerably in the likelihood that carding leads to an arrest and, for this reason, specifications including patrol zone fixed effects are preferred in this analysis.³² Introducing patrol zone-level fixed effects

³²Figures A.1 and A.2 in Appendix A show that these probabilities also vary considerably in the detention

Table 4: Show Cause

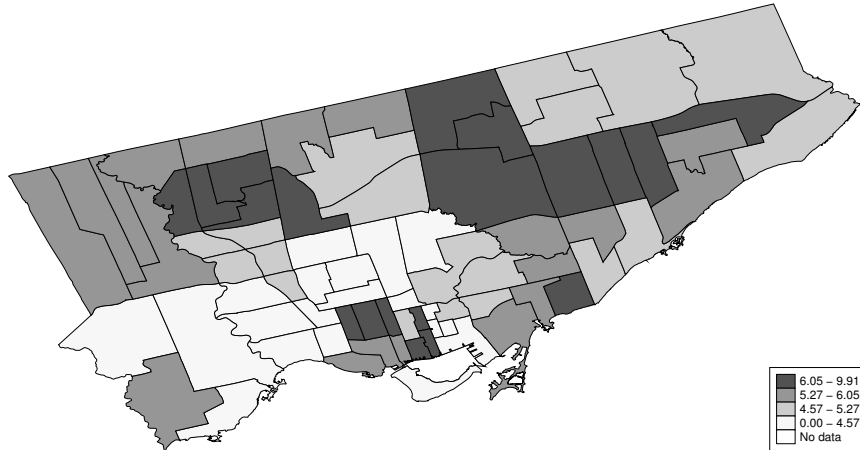
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	FE	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE	Time
			Cluster			Cluster	Cluster	Officer
Black	7.607*** (0.491)	7.601*** (0.490)	7.601*** (1.458)	6.732*** (0.500)	6.768*** (0.499)	6.768*** (1.185)	6.694*** (1.201)	6.724*** (0.500)
Observations	23,287	23,287	23,287	23,287	23,287	23,287	23,287	23,287
Prob. of Show Cause				83.85%				
Prob. of Show Cause Whites				80.86%				
Fraction of Black				0.393				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being called for a show cause hearing conditional on having been detained in Toronto (in %). Black is an indicator variable coding the suspect's race. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008-2013.

Figure 2: Probability of Being Arrested Conditional on Being Carded in Toronto



Notes: The figure reports the probability of being arrested conditional on having been carded within the same month in Toronto (in %) Source: TPS FIR, Arrest, and Detentions datasets, Years 2008–2013.

to the model permits the absorption of baseline outcome rates into the fixed effects. A zero coefficient on *Black* under the fixed effects specifications would, in this model, indicate an unbiased average police officer, whereas a negative coefficient would indicate racial bias.

Columns (4)-(7) of Tables 2, 3, and 4 show the results of the original Ordinary Least Squares (OLS) regressions while adding 77 patrol zone-level fixed effects. The difference in probabilities of arrest and detention between Black and White individuals conditional on being carded increases after accounting for differences in “baseline” rates across patrol zones, whereas the difference in probability between detained Blacks and Whites being called to a show cause hearing decreases. Column (8) of Tables 2 – 4 additionally include officer rank fixed effects. Including officer rank fixed effects mitigates the increase in differential probability for a Black suspect being arrested or detained that we see in Tables 2 and 3. Column (8) of Table 4 shows that the slight decrease in differential probability of a Black suspect being called for a show cause hearing is generally confirmed when including officer rank fixed effects. In each case, the outcome probabilities remain higher for Blacks than for Whites. According to Theorem 1, this evidence justifies rejection of the hypothesis of a relative bias against Blacks in the officers’ carding decisions *when considered on average across patrol zones*.

6 Discussion and Extensions

6.1 Measuring Bias: Disparities or Outcomes?

While much of the public concern over racial bias in carding is centered on arguments of disparities in police pressure, methods presented by Becker [4] and others suggest outcomes analysis as a more definitive measure of bias. Borrowing Theorem 1 from the analysis of

and show cause outcomes.

Coviello and Persico [6], I contend that a measure of bias can be gleaned from disparities in these outcomes – namely arrest, detention, and show cause rates. While outcomes analysis is the preferred measure of bias, correlation between outcome rates differentials and differentials in police pressure remain a possibility. To observe this possibility I present Figure 3, which shows the ratio of the police pressure on Blacks compared to Whites on the x-axis and the difference between Black and White arrest rates³³ on the y-axis. The plot on the left suggests a slight positive correlation between the measures of arrest rates and police pressure across Toronto patrol zones. However, when patrol zone 325³⁴, the apparent outlier, is removed from the analysis (as shown in the right-hand plot) the reliability of this correlation comes into question.³⁵ I see the regression model as insufficiently robust to small changes and therefore do not consider the positive correlation shown in Figure 3 strong evidence for correlation between arrest rates and relative police pressure.³⁶ As I do not find the correlation convincingly definitive, I leave this possible correlation open to further research.

Figures A.3 and A.4 in Appendix A present the correlation with police pressure for detention and show cause rates respectively. Figure A.3 suggests a slight positive correlation between detention rates and relative police pressure. However, this correlation is tenuous and becomes less robust when outliers are dropped from the analysis.³⁷ Figure A.4 suggests negative correlation between show cause rates and relative police pressure, though this correlation is weakly supported, with P-values of 0.531 and 0.243 for the two regressions shown in Appendix

³³The figure shows the 6-year average by patrol zone

³⁴Patrol zone 325 includes portions of the Bridle Path and Lawrence Park North neighbourhoods. In this patrol zone, Blacks make up approximately 1.5% of the total population. This heightened police pressure is consistent with the *Toronto Star* [25] finding that Blacks are more likely to be stopped than Whites in areas where fewer Black people live.

³⁵When patrol zone 325 is dropped from the analysis, the p-value jumps from 0.019 to 0.078. In this instance, the null hypothesis of zero correlation between the two measures is not rejected at the 5 % threshold.

³⁶My conclusion in this regard is also influenced by similar regressions not shown here that included yearly values for each patrol zone instead of the 6-year mean. These regression results severely call into question the robustness of this positive correlation as p-values close to 0.9 were recorded. These results are available on request.

³⁷The null hypothesis of zero correlation between detention rates and relative police pressure is not rejected at the 5 % threshold in the original regression, and p-values jump from 0.067 to 0.168 when patrol zone 325 is dropped from the analysis.

A.³⁸ I interpret these observations as evidence against the assumption that disparities in police pressure necessarily correlate with average officer bias, at least in the case of Toronto’s carding practice.³⁹

While Figure 3 helps visualize the correlation between police pressure and arrest rates, an important limitation should be noted.⁴⁰ As population data by patrol zone was not available, population data for each patrol zone was estimated using neighbourhood data⁴¹ and by comparing neighbourhood and patrol zone boundaries. As such, the individual data points in Figure 3 should not be considered perfectly accurate, but rather as an aid in understanding the general correlation of police pressure and arrest rates across patrol zones.⁴² Given the uncertainty in these analyses, I consider results related to correlations between the studied outcomes and disparities in police pressure inconclusive and I defer any definitive conclusions in this respect to further study.

6.2 Brown-skinned individuals

Thus far, the analysis for arrest, detention, and show cause rates has been restricted to Blacks and Whites. However, as *The Toronto Star* reported in 2012, “Brown” individuals were also overrepresented in the Toronto Police Service’s carding practice⁴³, though to a

³⁸The null hypothesis of zero correlation between show cause rates and relative police pressure is not rejected at the 10 % threshold.

³⁹Supplementary regression analyses corresponding to Figures A.3 and A.4 were also completed, including regression analyses including yearly values for each patrol zone instead of the 6-year mean and a regression analysis corresponding to Figure A.4 that excludes patrol zones 113, 126, and 325. When these outliers are dropped from the analysis, the predictive power of the regression model is severely impacted. These supplementary analyses support the interpretation of no correlation between relative police pressure and the corresponding measure of bias.

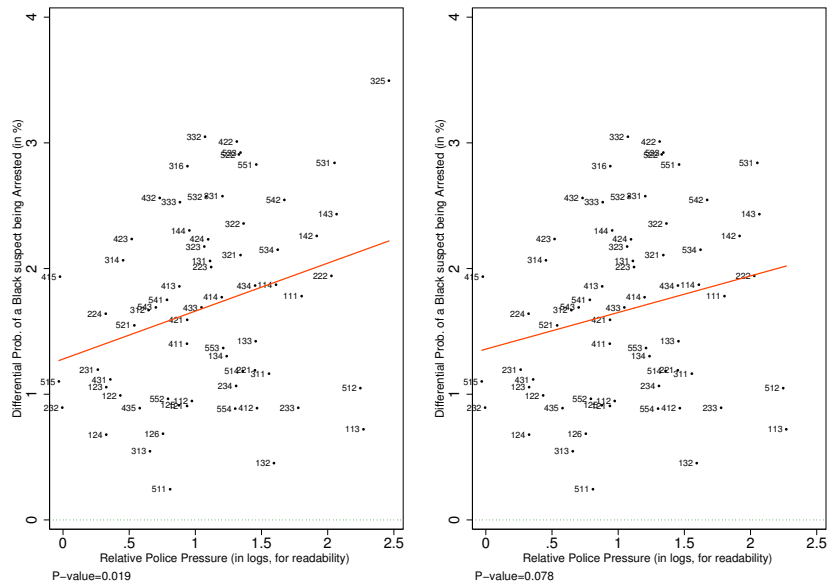
⁴⁰This same limitation applies to Figures A.3 and A.4

⁴¹From the 2011 National Household Survey

⁴²For more accurate analysis, I recommend that population data by patrol zone be recorded in the future.

⁴³Persons whose recorded skin colour is “Brown” account for 16.72 % of carded persons in the total sample, while making up 13.17 % of Toronto’s population. Source: Toronto Police Service FIR dataset and 2011 National Household Survey.

Figure 3: Differential Probability of a Black Suspect being Arrested and Relative Police Pressure



Notes: The figure plots the differential probability of a Black suspect being arrested (i.e. the estimated coefficient in the univariate regression of arrests on an indicator variable coding the suspect's race) against the natural logarithm of relative police pressure: $\frac{\text{Arrests of Blacks}}{\text{Black Population}} - \frac{\text{Arrests of Whites}}{\text{White Population}}$ in each Toronto patrol zone. The figure excludes 9 patrol zones for which population data was unavailable or was counted in an adjacent patrol zone. It also excludes the years 2008–2010 for zones 114, 124, 125, and 126, which were missing stop data. The plot on the right additionally excludes patrol zone 325. Sources: TPS FIR, Arrest, Detention Datasets. Population data from 2011 National Household Survey.

lesser extent than were Blacks. In the next step of the analysis I include individuals whose skin colour is recorded as “Brown.”⁴⁴ This larger sample includes 1,647,209 carding stops of Black, Brown, and White suspects from 2008 to 2013. In this sample, Blacks and those recorded as Brown respectively represent 26.4 % and 18 % of the stops, and an imminent arrest is made in 5.3 % of interactions on average.

Tables A.1, A.2, and A.3 show an extension of the baseline specification regressing the indicator variable coding whether the carded individual was imminently arrested, detained, or called to a show cause hearing on an indicator for Black individuals and on an indicator for Brown individuals. Depending on the model, Brown individuals who are carded are between 0.12 and 0.19 percentage points less likely to be arrested; between 0.18 and 0.29 percentage points less likely to be detained and; those detained are between 1.35 and 1.95 percentage points less likely to be called for a show cause hearing than are Whites. These relatively small differences in outcomes rates remain when patrol zone fixed effects are controlled for and are statistically significant in all but one specification.⁴⁵ Using Theorem 1, these outcome rates suggest a slight officer bias against Brown-skinned individuals, however, more research is needed.

6.3 Other Observable Characteristics

The analysis thus far has centered on skin colour. Other characteristics of the suspect, however, are perceptible to the officer prior to a stop or an arrest and therefore merit study as well. In the data these observables include gender and age. Tables 5, 6, and 7 display comparisons of the outcome rates across these characteristics.

⁴⁴By observing the most common countries of origin outside Canada, “Brown” refers most commonly to those of South Asian (Sri Lankan, Indian, or Pakistani) or Arab descent.

⁴⁵The non-statistically significant coefficients for Brown individuals result from the OLS Time and Cluster model for Tables A.1 and A.3. Lacking patrol zone fixed effects, these models are not the preferred specifications.

Table 5: Arrest – Other Suspect Characteristics

Sample	All (1)	All (2)	Black (3)	Black (4)	White (5)	White (6)
Model	OLS	FE	OLS	FE	OLS	FE
Black	1.339*** (0.113)	1.381*** (0.090)				
Female	-1.169*** (0.208)	-1.195*** (0.214)	-1.147*** (0.316)	-1.320*** (0.302)	-1.177*** (0.186)	-1.162*** (0.197)
Adult, 18+	-1.710*** (0.311)	-1.611*** (0.313)	-1.744*** (0.291)	-1.610*** (0.285)	-1.685*** (0.370)	-1.609*** (0.379)
Observations	1,330,285	1,330,285	428,431	428,431	901,854	901,854
Prob. of Arrest	5.452%		6.505%		4.951%	
Fraction of Black	0.322		1		0	
Fraction of Female	0.240		0.175		0.272	
Fraction of Adult	0.906		0.867		0.924	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of arrested conditional on having been carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 18+* is an indicator coding whether the suspect is 18 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008-2013.

Table 6: Detained – Other Suspect Characteristics

Sample	All (1)	All (2)	Black (3)	Black (4)	White (5)	White (6)
Model	OLS	FE	OLS	FE	OLS	FE
Black	0.462*** (0.059)	0.557*** (0.051)				
Female	-0.822*** (0.047)	-0.803*** (0.045)	-1.165*** (0.064)	-1.144*** (0.065)	-0.700*** (0.053)	-0.683*** (0.050)
Adult, 18+	-0.481*** (0.081)	-0.505*** (0.080)	-1.270*** (0.110)	-1.304*** (0.111)	0.141** (0.064)	0.131** (0.066)
Observations	1,330,285	1,330,285	428,431	428,431	901,854	901,854
Prob. of Detention	1.747%		2.134%		1.563%	
Fraction of Black	0.322		1		0	
Fraction of Female	0.240		0.175		0.272	
Fraction of Adult	0.906		0.867		0.924	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of detained conditional on having been carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 18+* is an indicator coding whether the suspect is 18 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008-2013.

Table 7: Show Cause – Other Suspect Characteristics

Sample	All (1) OLS	All (2) FE	Black (3) OLS	Black (4) FE	White (5) OLS	White (6) FE
Black	6.925*** (1.463)	6.214*** (1.251)				
Female	-3.082* (1.741)	-4.162*** (1.210)	-10.483*** (1.790)	-10.113*** (1.731)	-0.358 (1.982)	-2.330** (1.154)
Adult, 18+	-3.017** (1.199)	-1.264 (0.761)	-2.306** (0.975)	-1.330* (0.709)	-4.098** (1.955)	-2.008 (1.341)
Observations	23,239	23,239	9,144	9,144	14,095	14,095
Prob. of Show Cause	83.84%		88.45%		80.84%	
Fraction of Black	0.393		1		0	
Fraction of Female	0.147		0.0931		0.182	
Fraction of Adult	0.876		0.796		0.929	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on having been detained in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 18+* is an indicator coding whether the suspect is 18 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008-2013.

Table 5, 6, and 7 show that across samples arrest, detention, and show cause rates are lower for women than for men. These findings are compatible with findings of lower arrest rates for women, but differ from those found in Coviello & Persico’s [6] analysis of stop-and-frisk data from New York City, which showed higher hit rates for women than men. This difference may be explained in part by the methodological differences in data collection by the two police forces. Recalling that the purpose of carding is to gather information which helps to solve crimes, TPS’s FIR dataset often records information on multiple individuals for the same encounter. Therefore, a carding stop in Toronto may record information on a primary individual (the suspect) as well as those who happen to be present at the time of carding (known connections). Importantly, the data does not allow for identifying which individual is the primary suspect. In this circumstance, if the primary suspect is male and is accompanied by a woman at the time of carding, and this trend holds across many stops, women may be over-represented as suspects in the carding data. Such an over-representation could then aggregate to show lower arrest, detention, and show cause rates for women who are carded. This phenomenon merits deeper analysis but is outside the scope of this paper.

Adults (those over 18 years old) who are carded are generally less likely to be arrested, detained, or called to a show cause hearing than minors. The exceptions are the coefficients for White adults (0.141 and 0.131) who are more likely than White minors to be detained. As Coviello & Persico [6] note, positive coefficients such as those for White adults can be seen as supported by the prediction that the perceived “benefit” of detaining⁴⁶ a juvenile is smaller than when detaining an adult.⁴⁷ This same prediction does not extend to the coefficients for Black adults or to the outcomes in Tables 5 and 7, which indicate higher hit rates for youth. Tables A.22 and A.23 replicate the analyses for arrests and detentions defining adults as those over the age of 25 and a similar trend is found. Table A.24 replicates

⁴⁶Coviello & Persico [6] make this assertion with respect to arrests, whereas its extension to detentions is used here

⁴⁷This is perhaps since the law generally punishes juveniles less severely than adults [6]

the analysis for show cause and shows that when adults are defined as those aged 25 or older, White adults are more likely to be called for a show cause than White youth.

Despite conditioning on these additional observables, the coefficients for Black individuals in columns (1) and (2) of Tables 5, 6, and 7 resemble those found in their analogous Tables 2, 3, and 4. After controlling for these additional characteristics, the main estimates of interest are not greatly affected.

6.4 Multiple Stops and Recidivists

Those carded or arrested multiple times within the same month make up about 9 percent of the total observations. To avoid false conclusion from the merged datasets, the main analysis was replicated excluding those observations where an individual was carded or arrested more than once in a given month. Tables A.4, A.5, and A.6 show these regressions. The trend showing that Blacks are more likely to be arrested, detained, or called for show cause hearing conditional on having been carded continues in this restricted sample. Indeed, the probabilities of arrest, detention, and show cause conditional on being carded for Blacks compared to Whites are slightly higher than those found in the main analysis. In this supplementary analysis, Blacks who are carded are about 1.7 percentage points more likely to be arrested, between 0.618 and 0.71 percentage points more likely to be detained, and between 6.8 and 7.9 percentage points more likely to be called for a show cause hearing than are Whites.

Individuals who were carded and/or arrested more than once within the six-year span account for 39.4 percent of the total observations. Clearly, this subset of observations could have an outsized impact on the analysis. Tables A.7 – A.9 show the regression results when the main analysis is replicated including exclusively those individuals who have been carded

or arrested only once. In this restricted sample, the probabilities of arrest and detention conditional on being carded remain higher for Blacks than for Whites, but this difference is attenuated. In this analysis, Blacks who are carded are between 0.58 and 0.6 percentage points more likely to be arrested and between 0.15 and 0.2 percentage points more likely to be detained than Whites. Notably, the mean probability of arrest (for both Whites and Blacks) drops from 5.38 % to 3.33 % when frequently-carded and -arrested individuals are excluded from the analysis.

Table A.9 displays the results when regressing the indicator variable coding whether a carded individual is called to a show cause hearing on an indicator for Black individuals. In this restricted sample, Blacks are between 7.39 and 10.52 percentage points more likely to be called to a show cause hearing than are Whites. This represents a significant jump compared to the probabilities found in the main analysis. This would suggest that police are more likely to call for a show cause hearing for a Black person than a White person when it is the individual's first offence. The mean probability (for both Whites and Blacks) of a show cause hearing for a detained individual, however, drops from about 84 % to about 74 % when the sample is restricted to those carded or arrested only once and the smaller sample limits the analysis to 6,332 observations. What's more, for the preferred specifications – those including fixed effects – the increase in coefficients for Blacks is less dramatic. This suggestion, therefore, should be taken with a grain of salt as more research is needed on this front.

6.5 No Radio Call

For some instances when the nature of contact for a carding stop is recorded as “Radio Call,” we can infer that the decision to approach the individual in question was motivated, at least

originally, by someone other than the officer involved in the stop.⁴⁸ Up until this point, stops with radio call recorded as the nature of contact were included in the analysis since the final decision of whether to record the individual’s information rests with the officer on scene. However, an officer can plausibly be influenced by the concern of a citizen to take more concrete action in such a situation. As such, analyses of the results from these interactions could be skewed by the influence of a citizen’s bias rather than the officer’s.

As a higher number of Field Information Reports filled out in response to a radio call for a Black individual could better represent a citizen’s bias than an officer’s, I replicate the main analysis excluding observations for which “Radio Call” is listed as the nature of contact. In this replication (shown in Tables A.10 – A.12), Blacks who are carded are between 1.55 and 1.62 percentage points more likely to be arrested; between 0.57 and 0.69 percentage points more likely to be detained; and those who are detained are between 6.84 and 8.11 percentage points more likely to be called for a show cause hearing than are Whites.

These tables show that when carding stops for which “Radio Call” is recorded as the nature of contact are excluded from the sample, the coefficients on the main estimates of interest are not greatly affected.

6.6 General Investigation

“General investigation” is the most commonly recorded nature of police contact for street checks and is also the most ambiguous type of interaction. As concerns over racial profiling in arbitrary stops have been raised in Toronto, an examination of stops and hit rates for this type of contact alone merits investigation. I therefore replicate the analysis limiting the

⁴⁸A radio call indicates that the officer was radioed to arrive on scene. This call could come from another officer or could have originated from a citizen’s call to police. In either case, the officer’s behaviour once on scene could be influenced by the person who made the call.

sample to those interactions which record “General investigation” as the nature of police contact. These results are shown in Tables A.13, A.14, and A.15.

When “General investigation” is listed as the nature of contact, Blacks who are carded are between 1.1 and 1.21 percentage points more likely to be arrested; between 0.44 and 0.58 percentage points more likely to be detained; and those who are detained are between 5 and 6.04 percentage points more likely to be called for a show cause hearing than Whites. “General investigation” may, however, be recorded as the nature of contact for police investigations that do not involve street checks. As the data does not allow for greater specification of which of these interactions were street checks, I recommend exercising caution in extrapolating these results to street checks generally. Nevertheless, these results point to an area of interest for further research.

6.7 Drug-Related

Prior investigations have found that Black youth are more likely than White youth to be stopped and carded for drug-related reasons.⁴⁹ To delve into this disparity I replicate the main analysis limiting the sample to stops where the nature of contact is recorded as “Drug related.” Tables A.16, A.17, and A.18 show the results of these regressions.

In this more limited sample, Blacks who are stopped for drug-related reasons are between 1.09 and 1.83 percentage points more likely to be arrested and between 1.83 and 1.93 percentage points more likely to be detained than Whites. Table A.18 shows that, among those detained, Blacks who were carded for drug-related reasons are between 1.6 and 2.54 percentage points more likely to be called for a hearing of show cause than Whites, though none of these coefficients are statistically significant. By limiting the sample to drug-related interactions,

⁴⁹Meng *et al.* [17]

the results in Tables A.16 – A.18 suggest that Blacks are more likely to be arrested or detained for drug-related crimes. Without specific charge information, however, comparisons between Black and White suspects may be tenuous. Section 6.8 addresses this source of potential police bias by incorporating Charges data.

6.8 Arrests, Detentions, and Show Cause as Outcomes for Hit Rates Analysis

In this section I address the possibility that arrests, detentions, and show cause rates may not be objective outcomes. Ideally, the objectivity of these outcomes would be addressed through data on the percentage of arrests, detentions, or calls for show cause hearings that are dismissed in the courts.

Not having court data, I replicate the alternative analysis presented by Coviello and Persico [6] that looks at whether, given the suspect’s type of crime as recorded by the officer, the officer is more likely to arrest a Black suspect than a White suspect.⁵⁰

To check for police bias in the arrest, detention, and show cause decisions, I check whether the carded person’s skin colour predicts the probability of each outcome *after conditioning on the suspect’s recorded type of crime*. Such a test will indicate whether the officer’s decision displays racial disparities in converting a crime into an arrest, detention, or show cause hearing.

Tables A.19, A.20, A.21 show the results. With type of crime controlled for, Blacks are: slightly more likely to be arrested (between 0.237 and 0.278 percentage points) than are Whites; slightly less likely to be detained (between 0.027 and 0.065 percentage points),

⁵⁰For an explanation of this exercise’s suitability in resolving this issue see Coviello & Persico [6]

though the fixed effects specifications do not produce statistically significant coefficients and; among those detained, Blacks are between 3.197 and 3.507 percentage points more likely to be called for a show cause hearing.

The likelihood of carded Blacks being arrested, though higher, is only marginally so, and unlikely to be detected on an individual officer level. I interpret this small difference as consistent with the hypothesis that, given a suspect's type of crime, officers are not, on average, using racial discretion in deciding whom to arrest. Similarly, the results in Table A.20 support the hypothesis of an absence of racial discrimination in the detention decision, when controlling for recorded type of crime.

The results in Table A.21 show that Blacks are significantly more likely than Whites to be called to a show cause hearing when crime type is controlled for. These results suggest racial bias against Blacks on the part of the police officer in the show cause hearing decision. However, an important caveat to this conclusion remains. Since the data presents the category of the charge but does not specify its severity, comparisons between charges within the same category may not be entirely scientific. On this front, further research is needed.

6.9 Moving Toward an Objective Measure

6.9.1 Officer-In-Charge Decision

The results in the preceding section indicate that outcomes based on the primary officer's decision may not best represent an objective measure for applying outcome tests to measuring police bias. Since I do not have court data, I turn to encounters in which a superior police official, or an "Officer-In-Charge" (OIC), is involved in the decision to arrest, detain, or call for a show cause hearing. Carding encounters of this kind account for about 5 % of all stops.

This approach is based on the rationale that the presence of an OIC adds a level of institutional authority to the arrest, detention, or show cause decision. With this rationale in mind, I replicate the main analysis using a sample including only those carding encounters in which an OIC (“Sergeant” or higher rank) is present. We can then compare the results from the main analysis to those containing a greater measure of institutional authority to infer the presence or absence of bias on the part of lower ranking officers. If a comparison were to show, for example, that Blacks are less likely to be arrested in the sample with an OIC present than in the original regressions, that could indicate the presence of bias against Blacks among lower ranking officers in the carding decision.

Tables A.25 – A.27 show the results of these regressions. In this restricted sample, Blacks are more likely to be arrested, detained, or called for a show cause hearing than Whites, and this difference is more pronounced in the smaller sample than the original. From this comparison, I do not detect evidence of racial bias against Blacks on the part of lower ranking police officers.

Such an extension of the main analysis, however, is not without limitations. Officers involved in carding stops where *only* officers-in-charge are present, for example, can be seen as the first and last point of authority, implying that the original decision of the officers involved is unchecked by a higher ranking official. Using a higher ranking officer’s presence as a check on biased policing is, admittedly, far from ideal,⁵¹ and conclusions in this respect should be reserved for further study.

⁵¹In conversations with a former police officer, *The Toronto Star* [23] discovered that while there was no official quota system in place, carding figures were a factor in promotions. As such, contrary to acting as a check on frivolous stops, the higher ranking officers could have adopted and encouraged a culture of more stops.

6.9.2 Unconditional Release

A second attempt at finding an objective measure involves searching for a method to determine when arrest, detention, or show cause decisions are reversed or dismissed. While court data was not available, I turn to detentions for which a show cause hearing was called and an “unconditional release” was subsequently granted as a proxy.⁵²

With this new analysis come a few caveats. For one, an unconditional release can be granted at any point in the carceral process of a detained suspect. This means that a suspect may have been detained, had their detention extension approved in the courts, and completed their sentence by the time they are granted an unconditional release. By limiting the sample to those calls for show cause hearings where an unconditional release was then granted we can infer that an extended detention was being sought by police, and that the suspect was subsequently granted release without conditions. Within this sample, however, remains the possibility that a sentence lasting less than one month was fully served by the suspect who was then granted an unconditional release. The analysis is, admittedly, limited in its accuracy, yet presents one avenue for inferring outcomes from the show cause request using the limited data available.

Table A.28 shows the results when regressing an indicator variable coding whether a suspect who was called for a show cause hearing was granted an unconditional release on a variable indicating the suspect’s skin colour. The coefficients are near zero but are not statistically significant; as such, I draw no conclusions from these results. Nevertheless, such an analysis points in the direction of an appropriate outcome test to find an objective measure of officer bias in carding stops and presents an avenue for future research should more data be made available.

⁵²It should be noted that this is a new analysis, separate from the main analyses.

7 Conclusion

Toronto’s “carding” practice has had a disparate impact on visible minorities. Since 2010, there has been public outcry denouncing the practice and it has consequently been discontinued. However, iterations of suspect information collection remain a part of Toronto’s police operations.⁵³ If the collection of personal information is to remain a part of policing practices, having appropriate methods that measure any potential racial bias on the part of the officers collecting the information is imperative. The outcomes analysis presented in this research shows one such method for measuring racial bias at the level of the officer recording personal information.

Six years of data from TPS’s carding practice are analyzed in this theoretical framework. In each specification of the main analysis, Whites are found to be slightly less likely to be imminently arrested or detained conditional on having been carded than are Blacks. These results bolster the hypothesis that, on average, officers are choosing whom to card in a manner absent of racial bias against Blacks, since Whites are being carded despite representing a “less productive stop” for a police officer.

Following the theoretical framework of Coviello and Persico [6], the suitability of this analysis rests on the assumption that the decision to arrest (or detain) a recently carded individual is not itself tainted by police bias. No convincing evidence disproving this assumption was found in the supplementary analysis of Section 6.8. However, the fragility of this assumption remains an important caveat to the findings and a research area that merits closer attention. Arrests, like detentions and calls for show cause hearings, are themselves subject to police bias. As noted earlier, holding all else equal, an officer may be more likely to arrest a Black

⁵³The duration of the retention of personal data collected through carding was limited to one year in Chief Bill Blair’s final report on carding to the Toronto Police Services Board on April 14, 2015 [18]

individual than a White individual after having carded either. This limitation represents a significant caveat to the results of this application of outcome tests to the carding practice. In addition, the disproportionate intervention that a carding stop could represent in completing an arrest is a significant limitation to the suitability of using arrests as a measure of success in a hit rates test for racial bias in the TPS carding practice. Future research would benefit from a model that incorporates proportionality between the stop and the outcome.

The main results also show that, for those carded, Blacks are significantly more likely than Whites to be called to a show cause hearing conditional on being detained. The analysis in Section 6.8, which controls for recorded type of crime, suggests racial bias against Blacks in the show cause decision, though further research is required on this front.

Using the framework of the hit rates test, the analysis in Section 6.2 suggests a slight racial bias on the part of the police officer against those recorded as having a “Brown” skin colour. This supplementary analysis lies outside the main scope of this paper, but suggests an avenue for further study.

Since Toronto Police Service data does not allow for exact identification of which carding stop provides information leading to an arrest, the methodology employed in this analysis cannot claim perfect accuracy in pairing stops and arrests. Nevertheless, the results discussed in Section 6.4 provide evidence supporting the main conclusions.

Importantly, this analysis attempts to neither justify nor condemn the practice of carding and makes no claim to its legality. Rather, by continuing in the practice of using hit rates tests to measure racial bias in policing decisions, this analysis presents the results for one method of measuring officer bias in the carding decision, and suggests several areas for further study.

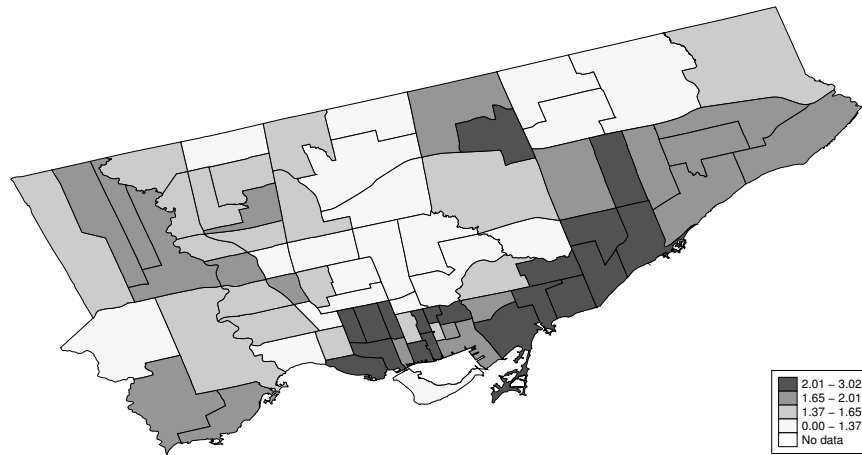
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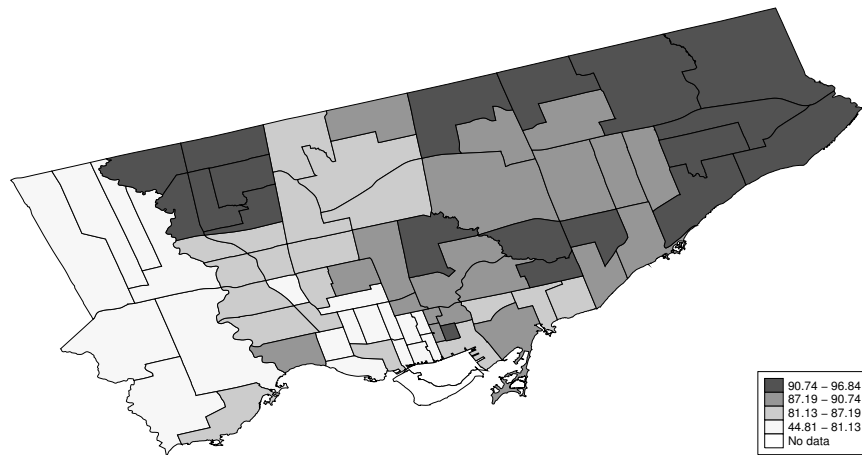
Appendix A Extra Figures & Tables

Figure A.1: Probability of Being Detained Conditional on Being Carded in Toronto



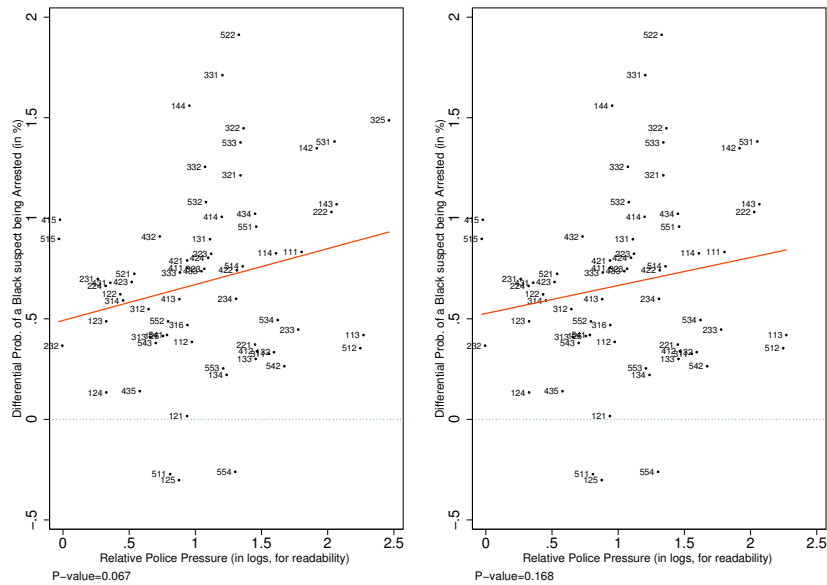
Notes: The figure reports the probability of being detained conditional on having been carded within the same month in Toronto (in %) Source: Toronto Police Service FIR and Detentions dataset, Years 2008–2013.

Figure A.2: Probability of Being Called for a Show Cause Hearing Conditional on Being Carded in Toronto



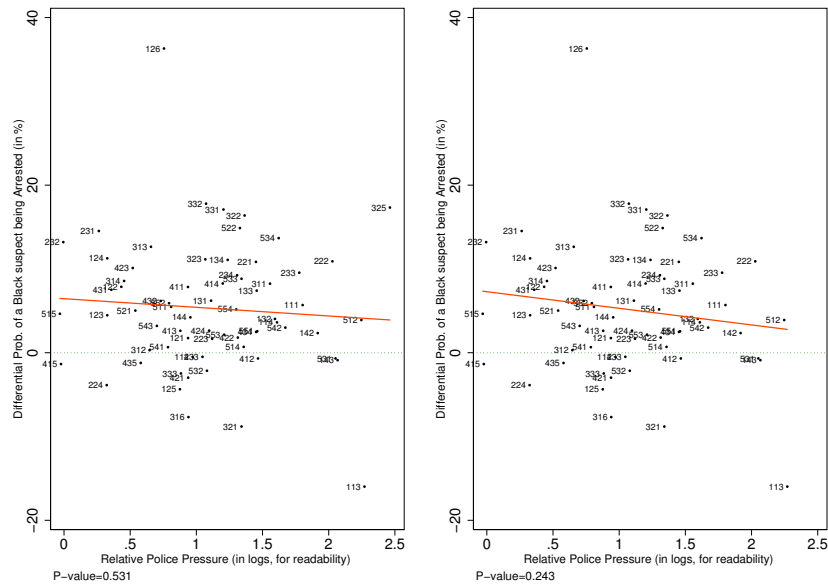
Notes: The figure reports the probability of being called to a show cause hearing conditional on having been carded and detained within the same month in Toronto (in %) Source: Toronto Police Service FIR and Detentions dataset, Years 2008–2013.

Figure A.3: Differential Probability of a Black Suspect being Detained and Relative Police Pressure



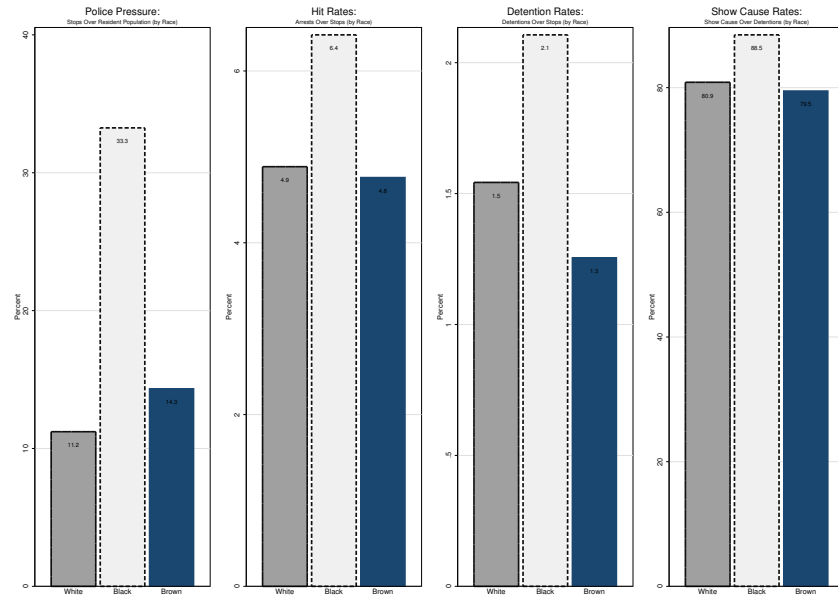
Notes: The figure plots the differential probability of a Black suspect being detained (i.e. the estimated coefficient in the univariate regression of detentions on an indicator variable coding the suspect's race) against the natural logarithm of relative police pressure: $\frac{\text{Detention of Blacks}}{\text{Black Population}} - \frac{\text{Detention of Whites}}{\text{White Population}}$ in each Toronto patrol zone. The figure excludes 9 patrol zones for which population data was either unavailable or counted in an adjacent patrol zone. It also excludes the years 2008–2010 for zones 114, 124, 125, and 126, which were missing stop data. The plot on the right additionally excludes patrol zone 325. Sources: TPS FIR, Arrest, Detention Datasets. Population data from 2011 National Household Survey.

Figure A.4: Differential Probability of a Black Suspect being Called for a Show Cause Hearing and Relative Police Pressure



Notes: The figure plots the differential probability of a Black suspect being called for a show cause hearing conditional on being detained (i.e. the estimated coefficient in the univariate regression of show cause on an indicator variable coding the suspect's race) against the natural logarithm of relative police pressure: $\frac{\text{ShowCauseofBlacks} - \text{BlackPopulation}}{\text{ShowCauseofWhites} - \text{WhitePopulation}}$ in each Toronto patrol zone. The figure excludes 9 patrol zones for which population data was either unavailable or counted in an adjacent patrol zone. It also excludes the years 2008–2010 for zones 114, 124, 125, and 126, which were missing stop data. The plot on the right additionally excludes patrol zone 325. Sources: TPS FIR, Arrest, Detention Datasets. Population data from 2011 National Household Survey.

Figure A.5: Police Pressure and Outcome Rates in Toronto – Including “Brown”-skinned Individuals



Notes: The figure reports the yearly average number of carding stops over resident population (1st panel), the yearly average arrests over yearly average stops (2nd panel), the yearly average detentions over yearly average stops (3rd panel), and the yearly average calls for show cause hearings over the yearly average detentions separated by skin colour in Toronto (in %).

Source: Toronto Police Service FIR and Detentions datasets, Years 2008-2013. Resident population from 2011 census data.

Table A.1: Arrest Made – including Brown

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.535*** (0.041)	1.530*** (0.041)	1.530*** (0.110)	1.581*** (0.043)	1.583*** (0.043)	1.583*** (0.090)	1.582*** (0.090)	1.564*** (0.043)
Brown	-0.123*** (0.047)	-0.120** (0.047)	-0.120 (0.143)	-0.178*** (0.050)	-0.177*** (0.050)	-0.177** (0.082)	-0.179** (0.080)	-0.184*** (0.050)
Observations	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209
Prob. of Arrest				5.268%				
Prob. of Arrest Whites				4.885%				
Fraction of Black				0.264				
Fraction of Brown				0.180				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* and *Brown* are indicator variables coding the suspect’s skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) and (7) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.2: Detained – including Brown

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.564*** (0.023)	0.561*** (0.023)	0.561*** (0.057)	0.641*** (0.024)	0.643*** (0.024)	0.643*** (0.048)	0.640*** (0.048)	0.631*** (0.024)
Brown	-0.287*** (0.027)	-0.287*** (0.027)	-0.287*** (0.059)	-0.186*** (0.028)	-0.186*** (0.028)	-0.186*** (0.045)	-0.186*** (0.045)	-0.190*** (0.028)
Observations	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209	1,647,209
Prob. of Detention				1.640%				
Prob. of Detention Whites				1.543%				
Fraction of Black				0.264				
Fraction of Brown				0.180				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on having been carded in Toronto within the same month (in %). *Black* and *Brown* are indicator variables coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.3: Show Cause – including Brown

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	7.607*** (0.498)	7.605*** (0.497)	7.605*** (1.457)	6.665*** (0.501)	6.707*** (0.500)	6.707*** (1.159)	6.633*** (1.180)	6.653*** (0.501)
Brown	-1.356** (0.684)	-1.405** (0.682)	-1.405 (1.305)	-1.861*** (0.688)	-1.937*** (0.686)	-1.937** (0.784)	-1.946** (0.810)	-1.950*** (0.686)
Observations	27,010	27,010	27,010	27,010	27,010	27,010	27,010	27,010
Prob. of Show Cause				83.25%				
Prob. of Show Cause Whites				80.86%				
Fraction of Black				0.339				
Fraction of Brown				0.138				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being called for a show cause hearing conditional on having been detained in Toronto (in %). *Black* and *Brown* are indicator variables coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.4: Arrest Made – Excluding Multiples Stops and Arrests within a Month

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.716*** (0.044)	1.711*** (0.044)	1.711*** (0.114)	1.730*** (0.046)	1.733*** (0.046)	1.733*** (0.091)	1.727*** (0.091)	1.712*** (0.046)
Observations	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100
Prob. of Arrest				5.395%				
Prob. of Arrest Whites				4.859%				
Fraction of Black				0.312				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. CColumn (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.5: Detained – Excluding Multiples Stops and Arrests within a Month

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.620*** (0.025)	0.618*** (0.025)	0.618*** (0.056)	0.705*** (0.026)	0.707*** (0.026)	0.707*** (0.048)	0.704*** (0.047)	0.694*** (0.026)
Observations	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100	1,239,100
Prob. of Detention				1.698%				
Prob. of Detention Whites				1.504%				
Fraction of Black				0.312				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.6: Show Cause – Excluding Multiples Stops and Arrests within a Month

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	7.894*** (0.519)	7.871*** (0.518)	7.871*** (1.512)	6.865*** (0.529)	6.891*** (0.528)	6.891*** (1.254)	6.768*** (1.272)	6.857*** (0.528)
Observations	21,037	21,037	21,037	21,037	21,037	21,037	21,037	21,037
Prob. of Show Cause				83.67%				
Prob. of Show Cause Whites				80.59%				
Fraction of Black				0.391				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.7: Arrest Made – Excluding Repeats

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.631*** (0.044)	0.596*** (0.044)	0.596*** (0.110)	0.599*** (0.046)	0.586*** (0.046)	0.586*** (0.080)	0.581*** (0.081)	0.579*** (0.046)
Observations	836,844	836,844	836,844	836,844	836,844	836,844	836,844	836,844
Prob. of Arrest				3.334%				
Prob. of Arrest Whites				3.165%				
Fraction of Black				0.268				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.8: Detained – Excluding Repeats

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.169*** (0.021)	0.153*** (0.021)	0.153*** (0.030)	0.202*** (0.022)	0.195*** (0.022)	0.195*** (0.027)	0.193*** (0.028)	0.189*** (0.022)
Observations	836,844	836,844	836,844	836,844	836,844	836,844	836,844	836,844
Prob. of Detention				0.757%				
Prob. of Detention Whites				0.711%				
Fraction of Black				0.268				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.9: Show Cause – Excluding Repeats

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	10.523*** (1.180)	9.572*** (1.165)	9.572*** (2.468)	8.085*** (1.168)	7.513*** (1.159)	7.513*** (1.944)	7.392*** (2.072)	7.438*** (1.160)
Observations	6,332	6,332	6,332	6,332	6,332	6,332	6,318	6,332
Prob. of Show Cause				74.19%				
Prob. of Show Cause Whites				70.92%				
Fraction of Black				0.311				
P-val FE				0.000	0.000	0.000	0.001	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.10: Arrest Made – Excluding Radio Call

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.605*** (0.046)	1.616*** (0.046)	1.616*** (0.112)	1.561*** (0.049)	1.575*** (0.049)	1.575*** (0.086)	1.574*** (0.087)	1.558*** (0.049)
Observations	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797
Prob. of Arrest				5.397%				
Prob. of Arrest White				4.852%				
Fraction of Black				0.339				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.11: Detained – Excluding Radio Call

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	0.571*** (0.026)	0.579*** (0.026)	0.579*** (0.056)	0.654*** (0.028)	0.668*** (0.028)	0.668*** (0.048)	0.664*** (0.048)	0.656*** (0.028)
Observations	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797	1,076,797
Prob. of Detention				1.655%				
Prob. of Detention Whites				1.462%				
Fraction of Black				0.339				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.12: Show Cause – Excluding Radio Call

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	FE	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE	Time
			Cluster			Cluster	Cluster	Officer
Black	8.076*** (0.543)	8.111*** (0.543)	8.111*** (1.736)	6.842*** (0.554)	6.892*** (0.554)	6.892*** (1.456)	6.912*** (1.468)	6.849*** (0.554)
Observations	17,825	17,825	17,825	17,825	17,825	17,825	17,824	17,825
Prob. of Show Cause				84.73%				
Prob. of Show Cause Whites				81.37%				
Fraction of Black				0.417				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER and Detentions datasets, Years 2008–2013.

Table A.13: Arrest Made – General Investigation

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	FE	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE	Time
			Cluster			Cluster	Cluster	Officer
Black	1.104*** (0.064)	1.156*** (0.064)	1.156*** (0.115)	1.160*** (0.068)	1.210*** (0.068)	1.210*** (0.114)	1.211*** (0.115)	1.203*** (0.068)
Observations	493,305	493,305	493,305	493,305	493,305	493,305	493,305	493,305
Prob. of Arrest				4.913%				
Prob. of Arrest Whites				4.510%				
Fraction of Black				0.364				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.14: Detained – General Investigation

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE TimeXFE Cluster	(8) FE Time Officer
Black	0.446*** (0.042)	0.483*** (0.042)	0.483*** (0.066)	0.539*** (0.044)	0.579*** (0.045)	0.579*** (0.064)	0.579*** (0.065)	0.576*** (0.045)
Observations	493,305	493,305	493,305	493,305	493,305	493,305	493,305	493,305
Prob. of Detention				2.053%				
Prob. of Detention Whites				1.891%				
Fraction of Black				0.364				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.15: Show Cause – General Investigation

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	6.040*** (0.680)	5.971*** (0.681)	5.971*** (1.632)	5.119*** (0.700)	5.054*** (0.701)	5.054*** (1.658)	5.070*** (1.665)	5.024*** (0.701)
Observations	10,130	10,130	10,130	10,130	10,130	10,130	10,123	10,130
Prob. of Show Cause				86.82%				
Prob. of Show Cause Whites				84.32%				
Fraction of Black				0.415				
P-val FE				0.000	0.000	0.003	0.003	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.16: Arrest Made – Drug Related

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.182*** (0.445)	1.097** (0.444)	1.097 (0.803)	1.658*** (0.453)	1.530*** (0.452)	1.530** (0.646)	1.824*** (0.645)	1.520*** (0.452)
Observations	26,300	26,300	26,300	26,299	26,299	26,299	26,297	26,299
Prob. of Arrest				13.48%				
Prob. of Arrest Whites				13.08%				
Fraction of Black				0.339				
P-val FE				0.000	0.001	0.020	0.006	0.001

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.17: Detained – Drug Related

Model	(1) OLS	(2) OLS Time	(3) OLS Time Cluster	(4) FE	(5) FE Time	(6) FE Time Cluster	(7) FE Time*FE Cluster	(8) FE Time Officer
Black	1.835*** (0.256)	1.860*** (0.256)	1.860*** (0.329)	1.906*** (0.265)	1.924*** (0.265)	1.924*** (0.315)	1.916*** (0.317)	1.923*** (0.265)
Observations	26,300	26,300	26,300	26,299	26,299	26,299	26,297	26,299
Prob. of Detention				4.042%				
Prob. of Detention Whites				3.419%				
Fraction of Black				0.339				
P-val FE				0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.18: Show Cause – Drug Related

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	FE	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE	Time
			Cluster			Cluster	Cluster	Officer
Black	2.537 (1.866)	2.391 (1.862)	2.391 (1.765)	1.793 (1.965)	1.600 (1.968)	1.600 (2.014)	1.701 (2.551)	1.757 (1.987)
Observations	1,063	1,063	1,063	1,061	1,061	1,061	961	1,061
Prob. of Show Cause				89.84%				
Prob. of Show Cause Whites				88.72%				
Fraction of Black				0.441				
P-val FE				0.362	0.416	0.430	0.507	0.377

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) (7) and (8) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Column (8) includes officer rank fixed effects. Source: Toronto Police Service FIR, FIROFFICER, and Detentions datasets, Years 2008–2013.

Table A.19: Arrest Made – Controlling for the Suspect’s Recorded Type of Crime

Model	(1) OLS Time Cluster	(2) FE Time Cluster	(3) FE Time*FE Cluster
Black	0.237*** (0.069)	0.276*** (0.060)	0.278*** (0.060)
Observations	1,350,705	1,350,705	1,350,705
Prob. of Arrest		5.379%	
Prob. of Arrest Whites		4.885%	
Fraction of Black		0.322	

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect’s skin colour. All the regressions include 38 indicators of the suspect’s recorded type of crime (as recorded by the officer in the Charges dataset). To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (2) and (3) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 3 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and Charges datasets, Years 2008–2013.

Table A.20: Detained – Controlling for the Suspect’s Recorded Type of Crime

Model	(1) OLS Time Cluster	(2) FE Time Cluster	(3) FE Time*FE Cluster
Black	-0.065** (0.027)	-0.028 (0.025)	-0.027 (0.025)
Observations	1,350,705	1,350,705	1,350,705
Prob. of Detention		1.724%	
Prob. of Detention Whites		1.543%	
Fraction of Black		0.322	

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is indicator variable coding the suspect’s skin colour. All the regressions include 38 indicators of the suspect’s recorded type of crime (as recorded by the officer in the Charges dataset). To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (2) and (3) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 3 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and Charges datasets, Years 2008–2013.

Table A.21: Show Cause – Controlling for the Suspect’s Recorded Type of Crime

Model	(1) OLS Time Cluster	(2) FE Time Cluster	(3) FE Time*FE Cluster
Black	3.507*** (0.913)	3.246*** (0.782)	3.197*** (0.795)
Observations	23,287	23,287	23,287
Prob. of Show Cause		83.85%	
Prob. of Show Cause Whites		80.86%	
Fraction of Black		0.393	

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect’s skin colour. All the regressions include 38 indicators of the suspect’s recorded type of crime (as recorded by the officer in the Charges dataset). To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (2) and (3) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 3 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and Charges datasets, Years 2008-2013.

Table A.22: Arrest – Other Suspect Characteristics, 25+

Sample	All (1)	All (2)	Black (3)	Black (4)	White (5)	White (6)
Model	OLS	FE	OLS	FE	OLS	FE
Black	1.270*** (0.113)	1.340*** (0.091)				
Female	-1.135*** (0.210)	-1.170*** (0.216)	-1.070*** (0.322)	-1.248*** (0.307)	-1.155*** (0.187)	-1.148*** (0.199)
Adult, 25+	-1.072*** (0.175)	-0.931*** (0.162)	-1.395*** (0.205)	-1.232*** (0.169)	-0.889*** (0.198)	-0.755*** (0.191)
Observations	1,330,285	1,330,285	428,431	428,431	901,854	901,854
Prob. of Arrest	5.452%		6.505%		4.951%	
Fraction of Black	0.322		1		0	
Fraction of Female	0.240		0.175		0.272	
Fraction of Adult	0.655		0.547		0.706	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on having been carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 25+* is an indicator coding whether the suspect is 25 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008–2013.

Table A.23: Detained – Other Suspect Characteristics, 25+

Sample	All (1)	All (2)	Black (3)	Black (4)	White (5)	White (6)
Model	OLS	FE	OLS	FE	OLS	FE
Black	0.447*** (0.059)	0.544*** (0.051)				
Female	-0.813*** (0.046)	-0.795*** (0.045)	-1.121*** (0.062)	-1.095*** (0.063)	-0.701*** (0.052)	-0.684*** (0.050)
Adult, 25+	-0.274*** (0.056)	-0.288*** (0.052)	-0.852*** (0.053)	-0.897*** (0.056)	0.059 (0.075)	0.061 (0.067)
Observations	1,330,285	1,330,285	428,431	428,431	901,854	901,854
Prob. of Detention	1.747%		2.134%		1.563%	
Fraction of Black	0.322		1		0	
Fraction of Female	0.240		0.175		0.272	
Fraction of Adult	0.655		0.547		0.706	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on having been carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 25+* is an indicator coding whether the suspect is 25 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008–2013.

Table A.24: Show Cause – Other Suspect Characteristics, 25+

Sample	All	All	Black	Black	White	White
Model	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	FE	OLS	FE	OLS	FE
Black	8.084*** (2.043)	6.725*** (1.405)				
Female	-3.314** (1.637)	-4.263*** (1.200)	-10.471*** (1.797)	-10.059*** (1.740)	-0.734 (1.801)	-2.484** (1.142)
Adult, 25+	2.916 (2.107)	1.515 (1.025)	-0.823 (0.967)	-1.060 (0.895)	5.850* (3.218)	3.108*** (1.151)
Observations	23,239	23,239	9,144	9,144	14,095	14,095
Prob. of Show Cause	83.84%		88.45%		80.84%	
Fraction of Black	0.393		1		0	
Fraction of Female	0.147		0.0931		0.182	
Fraction of Adult	0.603		0.441		0.708	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on having been detained in Toronto (in %). *Black* is an indicator variable coding the suspect's race; *Female* is an indicator coding the suspect's gender; *Adult, 25+* is an indicator coding whether the suspect is 25 years or older. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions include year fixed effects (6 dummies); even columns include patrol zone fixed effects (77 dummies). Source: Toronto Police Service FIR and Detentions datasets, Years 2008–2013.

Table A.25: Arrest Made – With Officer-in-Charge Present

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	OLS	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE
			Cluster			Cluster	Cluster
Black	1.546*** (0.177)	1.543*** (0.177)	1.543*** (0.237)	1.879*** (0.188)	1.878*** (0.188)	1.878*** (0.226)	1.834*** (0.224)
Observations	77,223	77,223	77,223	77,223	77,223	77,223	77,223
Prob. of Arrest				5.532%			
Prob. of Arrest Whites				5.043%			
Fraction of Black				0.316			
P-val FE				0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being arrested conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) and (7) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and FIROFFICER datasets, Years 2008–2013.

Table A.26: Detained – With Officer-in-Charge Present

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	OLS	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE
			Cluster			Cluster	Cluster
Black	0.840*** (0.109)	0.839*** (0.109)	0.839*** (0.126)	1.061*** (0.116)	1.064*** (0.116)	1.064*** (0.125)	1.021*** (0.129)
Observations	77,223	77,223	77,223	77,223	77,223	77,223	77,223
Prob. of Detention				2.010%			
Prob. of Detention Whites				1.744%			
Fraction of Black				0.316			
P-val FE				0.000	0.000	0.000	0.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being detained conditional on being carded within the same month in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) and (7) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and FIROFFICER datasets, Years 2008–2013.

Table A.27: Show Cause – With Officer-in-Charge Present

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	OLS	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE
			Cluster			Cluster	Cluster
Black	9.830*** (1.959)	9.714*** (1.963)	9.714*** (2.702)	7.351*** (1.979)	7.254*** (1.985)	7.254*** (1.959)	6.709*** (2.209)
Observations	1,552	1,552	1,552	1,552	1,552	1,552	1,463
Prob. of Show Cause				82.28%			
Prob. of Show Cause Whites				78.28%			
Fraction of Black				0.407			
P-val FE				0.000	0.000	0.000	0.003

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being called to a show cause hearing conditional on being detained in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) and (7) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and FIROFFICER datasets, Years 2008–2013.

Table A.28: Unconditional Release after Call for Show Cause

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	OLS	FE	FE	FE	FE	FE
		Time	Time		Time	Time	Time*FE	Time
			Cluster			Cluster	Cluster	Officer
Black	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Observations	19,527	19,527	19,527	19,527	19,527	19,527	19,527	19,527
Prob. of Unconditional Release				0.00686%				
Prob. of Unconditional Release Whites				0.00700%				
Fraction of Black				0.415				
P-val FE				0.846	0.864	0.842	0.814	0.895

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: Estimates are on 77 patrol zones. The dependent variable is the probability of being given an unconditional release conditional on being called for a show cause hearing in Toronto (in %). *Black* is an indicator variable coding the suspect's skin colour. To control for possible time trend in the dependent variable and patrol zone specific characteristics regressions (5) (6) and (7) additionally include year fixed effects (6 dummies) and patrol zone fixed effects (77 dummies). Column 7 includes interactions between year fixed effects and patrol zone fixed effects. Source: Toronto Police Service FIR, Detentions, and Releases datasets, Years 2008–2013.

Appendix B Data Documentation

Table B.1: Field Definitions

Dataset	Field Name	Description
Addresses	STAR_ARREST	Unique identifier for persons arrested
	STAR_ADDRESS_ID	Unique identifier for persons arrested home address at the time of arrest
	POSTAL_CODE	Postal code where person resides in
	CITY	City where the person resides at time of contact
	HOME_PATROL_ZONE	TPS patrol zone in which the person resides at the time of contact
Arrests	WARRANT_IND	Indicator whether a warrant was issued for individual arrested
	IMM_ENTRY_DATE	Date of immigration to Canada
	TYPE	Type of arrest
	BIRTH_CITY	City where person arrested was born in
	BIRTH_COUNTRY	Country where person arrested was born in
	BIRTH_PROVINCE	Canadian province where person arrested was born in
	EMPLOYMENT_STATUS	Employment status of person arrested
	ARR_DATE	Date person was arrested
	IMMIGRATION_STATUS	Type of immigration status of person arrested
	LANGUAGE	Primary language of person arrested
	SEX	Sex of person arrested
	SKIN_COLOUR	Skin colour of the person arrested
	AGE	Age of the person contacted at the time of arrest
	STAR_ARREST	Unique identifier for persons arrested
	STAR_PERSON	Unique id of the person for Toronto Star only
U_ID	Identifies those people are the same person if their U_ids are the same.	
DOB	Date of birth of the individual arrested	
STAR_CASE	Privatized case number	
	STAR_ARREST	Unique identifier for persons arrested

Table B.1: Field Definitions

Dataset	Field Name	Description
Bookings	INJURY_ILLNESS	Indicator of whether person arrested was injured or ill at time of arrest
	DETOX	Indicator of whether person arrested required to detoxify at time of arrest
Charges	START_DATE	Indicates year and month the offence began
	DISPOSITION_DATE	Date when case disposition was rendered
	CROWN_ENV_NUMBER	Indicates how many crown envelopes were used
	STAR_CASE	Privatized case number
	STAR_ARREST	Unique identifier for persons arrested
	STAR_PERSON	Unique id of the person for Toronto Star only
	CATEGORY	Type of charge based on offence (i.e. Prostitution, Fail to appear, Violent Minor, etc.)
	PATROL_AREA	Toronto police patrol zone where the contact occurred
	AGE_AT_OFFENCE	Age of person at the time of offence
INCIDENTTYPE	Type of charge (i.e. Racial, Domestic, Sexual, Abuse, G8G20, etc)	
Checks	ON_BAIL	Indicator if person investigated is on bail at the time
	ON_PROBATION	Indicator if person investigated is on probation at the time
	PREV_CONVICTION	Indicator if person investigated has any previous convictions at the time
	TAP_PAROLE	Indicator if person investigated is on parole at the time
	STAR_ARREST	Unique identifier for persons arrested
Detentions	REASON	Indicator of what reason for a person to be detained (i.e. Show Cause)
	STAR_ARREST	Unique identifier for persons arrested

Table B.1: Field Definitions

Dataset	Field Name	Description
FIR	CONTACTID	Unique identifier for each contact card made
	ZONE	Toronto police patrol zone where the contact occurred
	NATUREOFCONTACT	Reason for the contact to take place (i.e. Loitering, HTA Infraction, etc.)
	CONTACTDATETIME	Time and Date of the contact
	AGE	Age of the person contacted at the time of contact
	SEX	Sex of person contacted, if no identification is provided officer would infer
	BIRTHPLACE	place of birth of the person contacted
	SKINCOLOUR	Skin colour of the person contacted, this may be inferred by officer if this is not indicated by the person
	DOB	Date of birth of the individual contacted
	U_ID	Identifies those people are the same person if their U_ids are the same.
	STAR_PERSON_ID	Unique id of the person for Toronto Star only
HOME_CITY	City where the person resides at time of contact	
HOME_PATROL_ZONE	TPS patrol zone in which the person resides at the time of contact	
FIROFFICER	CONTACTID	Unique identifier for each contact card made
	STAR_OFFICER	Unique identifying number for each officer rather than badge number
	PLATOON	Platoon the officer was assigned to at the time of the contact
	UNIT	TPS Division or Unit the officer was assigned to at the time of the contact
	RANK	Rank of the officer involved in the contact
	IDX	Multiple officers may be associated to a single contact card. This column associates a number to an officer based on the order of entry on the card
Releases	STAR_ARREST	Unique identifier for persons arrested
	RELEASE_DATE	Date when the person was released from detention

Table B.1: Field Definitions

Dataset	Field Name	Description
	RELEASE_TYPE	Indicates the type of release (i.e. Unconditional, Form 10, etc.)

Table B.2: Arrests Dataset - Entry Definitions

Variable	Entry	Definition
Type	Appear Notice	Notices telling a person that they have to appear in court at a specific time and place to answer (or respond to) a criminal charge. Usually, a police officer gives you an appearance notice. No warrant is required
	Arrest	To take custody or hold a criminal suspect with legal authority.
	Bench Warrant	Issued when individual does not appear in court when notified to
	Provincial Offence Ticket	Issued for offences under the Provincial Offences Act
	Summon Application	Means an unsworn certificate issued to a defendant under Part I of the Provincial Offences Act (pink copy) for offences where a set fine is not provided and/or the maximum fine does not exceed \$500 or to young persons as defined in S. 93 of the Provincial Offences Act.
	Warrant in the 1 st	Offence has been committed by a person not yet apprehended, may have a warrant in the first instance upon presentation of an Information to a Justice

Table B.3: Detentions Dataset - Entry Definitions

Variable	Entry	Definition
Reason	ForIDPurpose	To be able to identify the individual detained
	HeldOutAgency	Held on the behalf of an outside police agency and awaiting pickup
	Intoxicated	Individual is intoxicated
	Other	A different reason other than those listed
	ShowCause	Investigators have identified reasons to believe the individual is a risk to be released and should be held

Table B.4: Releases Dataset - Entry Definitions

Variable	Entry	Definition
	Form10	Promise to appear in court
	Form104	A Summons to a defendant issued under Part III of the Provincial Offences Act for more serious incidents to allow for higher penalties commenced by the swearing of an Information

Table B.4: Releases Dataset - Entry Definitions

Variable	Entry	Definition
	Form106	Is a provincial summons to provincial court- can be used when needing document services to serve someone outside of the city- compels them to POA court.
	Form11	Released without sureties and with or without deposit. Under normal circumstances, the person will be released without deposit. Where person resides outside Ontario, or more than 200km from the place of custody, the release may be with deposit. In any event, the value of the deposit shall not exceed \$500.
	Form11pt1	Release from custody to enter into an Undertaking and to agree to adhere to conditions.
	Form12	Is a provincial summons to provincial court- can be used when needing document services to serve someone outside of the city- compels them to POA court.
	Form134	Provincial release from station by OIC condition can be stipulated of owing up to \$300.00 if fails to attend court.
	Form135	Provincial release by Justice- surety can be ordered as a condition of release in regards to the provincial charge
Type	Form148	Under provincial offences act Release by the OIC for person who is not a resident of province and a cash bail can be asked for to ensure attendance at court.
	Form32pt1a	Recognizance used to compel a witness to court, used while a case is under appeal , as part of a peace bond
	Form6	It is a summons to criminal court- usually would be used for a private information laid by a citizen
	Form9	Issued in lieu of an arrest where circumstances warrant, and where the person can be arrested without warrant or to release a person after an arrest has been made
	ProvOffncTck	Provincial Offences Ticket
	ReleasdAnPAg	Release to another police agency
	ReltoImmig	Release to Immigration
	Unconditionl	Unconditional Release
	YouthReferPr	Youth Referred to Social Program

Table B.5: Charges Dataset - Entry Definition

Variable	Entry	Definition
	AdmJustCourt	Examples include: Att. Obstruct, Breach of Conditions, Perjury

Table B.5: Charges Dataset - Entry Definition

Variable	Entry	Definition
	AdmnJustOther	Examples include: Attempt Escape, Assist Escape
	CCoother	Examples include: Conspiracy to commit crime, Cruelty to Animals
	Child	Examples include: Abduction, Abandon
	Commercial	Examples include: Vehicle Over Loaded, Fail to Carry Inspection Report, Tow Defective Vehicle
	DriveAlcohol	Examples include: Driving under influence of alcohol
	DriveOther	Examples include: Driving related other than alcohol
	DrugsOther	Examples include: Import and Export
	DrugsPossess	Examples include: Drugs Possession
	FailAppear	Example: Fail to Appear to Court
	FailComply	Example: Fail to Comply
	FirearmOther	Firearm related other than possession or violent, Example: Acquiring without F.A.C.
	FirearmPossess	Firearm possession, Example: Careless Storage
	FirearmViolent	Example: Discharge Firearm, Use of Firearm
	Fraud	Fraud related
Category	Game/Bawd/Moral	Gaming or bawdy house
	HTAOther	Highway Traffic Act related other than those listed, Example: Radar Warning Device
	Impaired	Impaired driving related
	MovingBoth	Example: Unnecessary Slow Driving, Unsafe Lane Change
	MovingMajor	Moving vehicle violation major, example: Careless Driving, Driving Wrong Way
	MovingMinor	Moving vehicle violation minor, example: Disobey Sign, Fail to Yield, Improper Turn
	Neglect	Example: Fail to Remain, Fail to Report accident
	Non-Moving	Non-moving vehicle offence, example: Improper Licence
	Nuisance	Example: Mischief, Cause Disturbance, Loitering
	Obstruct	Example: Assault Peace Officer, Obstruct Peace Office
	PedestrianOffence	Example: Fail to Wear Helmet, Solicit Business
	Permit/Plate/Paper	Vehicle permit, plate violations
	Process	Example: Breach of Peace, Surety Warrant, Peace Bond
	Property	Property damage related charge, example: Arson, Break & Enter
	PropThreat	Threaten property, example: Extortion, Intimidation

Table B.5: Charges Dataset - Entry Definition

Variable	Entry	Definition
	Prostitution	Prostitution related
	Seatbelt	Seatbelt violation
	SexOther	Sexual assault other than serious, example: Indecent Acts
	SexSerious	Sexual assault serious, example: Aggravated Sexual Assault, Gang Sexual Assault
	Vehicle	Vehicle not being in a condition to be operated related
	ViolentMajor	Example includes: Administering Drug, Manslaughter
	ViolentMinor	Example includes: Threatening Bodily Harm, Threatening Animals, Criminal Harassment
	Other	Those that do not fall into the other categories
	Domestic	Family or commonlaw relationship
IncidentType	Sexual	Assault or violation
	Abuse	Elder, child, or vulnerable individuals who are victimized
	G8G20	Those charges that stem from the G8G20 summit
	Racial	Charges that relate to when the victim was targeted due to race

Table B.6: FIROFFICER Dataset - Entry Definitions

Variable	Entry	Definition
	DXX	XX Division. Example: D23 = 23 Division
	1HQ	1 District Headquarters
	3HQ	3 District Headquarters
	4HQ	4 District Headquarters
	AFC	Area Field Command
	ARC	Area Courts
Unit	ASC	Corporate Services Command
	AUT	Auto Squad
	BRD	TPS Board
	CAO	Administrive Command
	CCR	Communication Centre
	CFC	Central Field Command
	CHF	Chief of Police
	CIA	Crime Information Analysis

Table B.6: FIROFFICER Dataset - Entry Definitions

Variable	Entry	Definition
	CIN	Public Complaints Investigation
	COL	CO Bick College
	COM	Communication Services
	COP	Community Programs
	COS	Divisional Policing Safety Unit
	CPN	Corporate Planning
	CRT	Court Services
	CSP	Communications Support
	CTL	Central Courts
	CTU	Central Traffic
	DDC	Detective Operations
	DFC	Field Command
	DOC	Toronto Police Operations Centre
	DOF	Duty Desk
	DOP	Detective Operations
	DTS	Detective Services
	EAP	Employee & Family Assistance
Unit	EFC	East Field Command
	EMO	Emergency Management & Public Order
	EMP	Employment
	ERM	Eterprise Resource Management
	ETF	Emergency Taskforce
	ETU	East Traffic
	FCM	Facilities Management
	FIS	Forensics
	FLT	Fleet & Materials Management
	FMT	Financial Management
	FRD	Fraud
	HLD	Holdup
	HOM	Homicide
	HRC	Human Resouce Command
	HRE	Diversity and Inclusion
	HRS	Employment Unit
	HRU	Human Resource
	IAS	Information Access & Security
	INA	Internal Affairs

Table B.6: FIROFFICER Dataset - Entry Definitions

Variable	Entry	Definition
	INP	Audit & Quality Assurance
	INT	Intelligence
	INV	Professional Standard
	LSV	Legal Services
	MAR	Marine
	MTD	Mounted
	NTU	North Traffic
	NWC	North West Field Command
	OCH	Occupational Health & Safety Wellness
	OHS	Occupational Health & Safety
	OMT	Occurrence Managaement
	OPS	Operations
	OSC	Public Safety Operations
	PAR	Parole
	PBA	Public Affairs
	PCB	Public Complaints Investigation Bureau
Unit	PHQ	Parking Enforcement HQ
	PIC	Corporate Communication
	PKE	Parking Enforcement East
	PKW	Parking Enforcement West
	POC	Community Safety Command
	PPB	Property & Video Evidence
	PRS	Corporate Risk Management
	PSC	Specialized Operations Command
	PSS	Parking Support Services
	PSU	Public Safety & Emergency Management
	PUR	Purchasing
	R&E	Telecommunications
	REP	Bail and Parole Enforcement
	RIS	Records & Information Security
	RMS	Records Management Services
	RMT	Records Management
	RMU	Professional Standards Support
	S&I	Security & Information
	SAS	Sex Crimes Unit
	SDU	Staff Planning

Table B.6: FIROFFICER Dataset - Entry Definitions

Variable	Entry	Definition
Unit	SDV	Staff Development
	SIS	Integrated G&G Task Force
	SUM	Summons
	SYS	Infrastructured Opers Supp Svc
	T&E	Toronto Police College
	TDS	Drug Squad
	TED	Training Education & Development
Rank	PC	Police Constable
	PC1/2/3/4	The notation of numbers following PC signifies seniority. A new officer in their first year holds the rank PC4. The following year, the rank is PC3. Third year rank is PC2. Fourth year and after, their rank would be PC1 or PC.
	SGT	Sergeant