CRIME AND JUSTICE BULLETIN

Why are Aboriginal adults less likely to receive cannabis cautions?

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AIM

To examine differences in the rates of cannabis cautioning between Aboriginal and non-Aboriginal adults in NSW, and to identify the extent to which eligibility criteria, legal, and other observed factors explain disparities in the use of cannabis cautioning as an alternative to a charge.

METHOD

A dataset of 38,813 observations involving 27,127 adult offenders proceeded against for a cannabis use/possession incident between January 2017 and February 2020 was extracted from the NSW Police Force's Computerised Operational Policing System (COPS) database and linked to the NSW Bureau of Crime Statistics and Research's (BOCSAR) Reoffending Database (ROD). We examine descriptive statistics for this sample and then apply a Kitagawa-Oaxaca-Blinder (KOB) decomposition to a subsample of 18,357 observations involving 15,846 adult offenders who met the eligibility criteria for a cannabis caution. This method allows us to identify the degree to which observed offender characteristics explain cautioning disparities for eligible offenders.

RESULTS

There was a 32.2 percentage point (p.p.) difference in cautioning rates between Aboriginal and non-Aboriginal people charged with cannabis use/possession (11.7% vs 43.9% for Aboriginal and non-Aboriginal people respectively). Eligibility criteria largely explained this disparity. In our sample, 78.4% of Aboriginal people proceeded against for a cannabis offence were ineligible to receive a caution (based on the eligibility criteria we observed in our dataset) compared with 45.7% of non-Aboriginal people. This difference can primarily be attributed to the fact that Aboriginal people proceeded against for cannabis use/possess incidents were much more likely than non-Aboriginal people to have a prior proven drug, violent or sexual offence. Amongst those eligible to receive a caution, we observed a 34.4 p.p. difference in the rate of cautions issued to Aboriginal and non-Aboriginal offenders (39.5% for eligible Aboriginal offenders vs 73.9% for eligible non-Aboriginal offenders). Higher levels of prior offending and imprisonment among Aboriginal offenders explained 24.5 p.p. (71%) of this difference. Police Area Command (PAC)-level variation in cautioning rates explained 5.0 p.p. (15%) of the disparity, while demographics explained another 2.0 p.p. (6%) of the difference. The remaining 2.9 p.p. (8%) was unexplained.

CONCLUSION

The difference in cannabis cautioning rates for Aboriginal and non-Aboriginal adults can largely be explained by eligibility criteria and offender characteristics. Taken together, disparities in cautioning rates will likely persist absent a change in the eligibility criteria, a reduction in scope for police discretion, or policies which address factors that contribute to over representation of Aboriginal people in the justice system.

KEYWORDS   Aboriginal/Indigenous Australians   Drugs and Drug Courts   Offenders
Statistical methods and modelling

INTRODUCTION

Cannabis has long been the most widely used illicit drug in Australia. From 2001 to 2019, around 10% of Australians over the age of 14 reported using cannabis in the previous 12 months. In comparison, the next most common illicit drugs (cocaine and ecstasy) were used by around 3% of Australians (Australian Institute of Health and Welfare [AIHW], 2023). These high rates of cannabis use result in major costs to the criminal justice system. In 2015, cannabis use was estimated to cost Australians 4.5 billion dollars, with over half of these costs arising from the enforcement and prosecution of cannabis offences (Whetton et al., 2020). In New South Wales (NSW), the Local Court incurs much of the cost of processing cannabis offences. In the 12 months to June 2022, 4,922 adult offenders appeared in NSW Local Courts for possession and/or use of cannabis. This far exceeded the number of defendants who appeared for possession and/or use of amphetamines (2,787), cocaine (1,296), narcotics (513), ecstasy (265), and other drugs (1,519) (NSW Bureau of Crime Statistics and Research [BOCSAR], 2022).

Court diversion policies for low-level illicit drug offences aim not only reduce costs associated with court proceedings, but also to reduce any criminogenic impact of formal involvement with the justice system. Such policies have become increasingly popular in the industrialised world, particularly in the wake of evidence that punitive responses alone do not reduce illegal drug use and criminal activity (Bull, 2003). There also appears to be little causal evidence supporting any criminogenic effects of cannabis use. Payne and Gaffney (2012) found that only a minority (6.4%) of the 887 police detainees interviewed in the NSW Drug Use Monitoring in Australia (DUMA) study, who reported having used cannabis in the previous month, attributed their offending to their cannabis usage. Makkai and Payne (2003) interviewed 2,135 adult male offenders incarcerated in prisons in four Australian jurisdictions, finding that 18.0% of offenders attributed their most serious offence to illegal drugs. Additionally, although cannabis was usually the first illegal drug offenders tried, this generally occurred after the onset and persistence of minor offending. Similarly, Pritchard and Payne (2005) interviewed 371 juveniles in custody. While the majority of offenders reported using cannabis on a regular basis and that drug use had an impact on their criminal offending behaviour, most juveniles did not begin using drugs until after their first offence.

The NSW Cannabis Cautioning Scheme

The Cannabis Cautioning Scheme was introduced in NSW in April 2000 in response to a recommendation from the 1999 NSW Drug Summit to formalise police discretionary powers regarding the issuing of cautions for minor drug offences (Swain, 1999). Prior to the introduction of the Scheme, police could either informally warn or charge individuals who were caught with small amounts of cannabis. The Scheme created a formal diversion pathway for adult offenders who meet the following eligibility criteria:

- the offender must possess no more than 15 grams of dried cannabis and/or equipment for the use of cannabis;

- the offender must be an adult;

- the identity of the offender must be confirmed (typically by sighting identification);

- sufficient evidence to prosecute the offender must exist;

- the drug must be for personal use only;

- the offender must not be involved in any other criminal offence at the time, for which a brief of evidence would be submitted;

- the offender must have no prior convictions for drug, violent or sexual offences;

- the offender must admit to the offence;

- the offender must consent to the caution and sign a caution notice;

- the caution must be appropriate; and

- the offender must not have been issued two or more previous cannabis cautions.

The cautioning procedure requires police to first secure the cannabis and/or equipment. The offender's identity and criminal history are then checked, and the cannabis secured from the offender is weighed or estimated if scales are unavailable. Once the offender has otherwise been confirmed as eligible to be dealt with under the scheme, police can proceed to issue a caution if the offender is willing to admit to the offence and consents to the caution. Cautioned offenders sign a notice informing them about the health and legal consequences of cannabis use and are provided with information about a dedicated 24-hour cannabis cautioning helpline run by NSW Health; the Alcohol and Drug Information Service NSW (ADIS). Police are not required to caution all eligible offenders and can exercise their discretion to charge or informally warn them as necessary. Cautions can also be withdrawn if warning or charging the offender is deemed more appropriate at a later stage. In 2001, the procedure for issuing a second cannabis caution was amended in response to the low rate of offenders who voluntarily contacted ADIS for information regarding their cannabis use. The amended procedure required police to escort the offender to a police station to explain that they have 14 days to complete an ADIS cannabis education session. Both police and ADIS were required to monitor if the offender completes the session. The Local Court is notified if the offender fails to complete the education session and further offences are committed.

An early evaluation of the Cannabis Cautioning Scheme found that it was successful in diverting cannabis offenders from the court system. Baker and Goh (2004) extracted data on all cautions and charges for cannabis use or possession from the NSW Police Computerised Operational Policing System (COPS) database and data relating to finalised charges for cannabis use and possession from BOCSAR's Criminal Courts database. Comparing the first three years of the scheme with the three years before the scheme was introduced, Baker and Goh found significant downward trends in charges for cannabis offences, with 6,679 fewer people proceeded against to court by the police, 5,241 fewer charges dealt with by the court and 2,657 fewer offenders convicted of a cannabis offence. A later study by Payne et al. (2008) documented the benefits of diversion, reporting that 85.9% of first-time offenders who received a cannabis caution in NSW did not return to the criminal justice system within 18 months, and two-thirds of those who received a cannabis caution and who had a prior offence committed fewer offences after their diversion than in the period before. Similarly, an audit of the scheme in 2011 (Audit Office of NSW, 2011) identified that cautioned offenders were around 10.0 percentage points (p.p.) less likely to reoffend with minor cannabis offences than offenders who were instead proceeded to court with cannabis offences. This latter study failed to account for offender/offence characteristics associated with both the likelihood of receiving a caution and the likelihood of offending (e.g., prior offences) and therefore cannot be interpreted as a causal estimate of the effect of cautioning on recidivism. However, other Australian studies also suggest that drug diversion is associated with reduced offending. Shanahan et al. (2017) assessed the impact of cannabis diversion programs across Australia on offending, health, and social domains using data from a national online survey of 998 Australians aged 17 or older who had recently been detected by police for cannabis use/possession. They found that cautioning reduced self-reported offending rates (defined as engaging in violent crime, fraud, property crime, or for-profit dealing) by similar amounts as charging or issuing of informal warnings.

Beyond the possible benefits of cannabis cautioning, scholars and media commentators have raised concerns about disparities between Aboriginal and non-Aboriginal people in access to this diversionary option (Baker & Goh, 2004; McGowan & Knaus, 2020). In a recent media report on the issue, McGowan and Knaus (2020) presented two key statistics in support of bias in cautioning: (1) over the five-year period between 2013 and 2017, 82.6% of all Aboriginal people found with a non-indictable quantity of cannabis were pursued through the courts, compared with only 52.3% for the non-Aboriginal population; and (2) over the same five-year period, only 11.4% of Aboriginal Australians caught with small amounts of cannabis were issued cautions compared to 40.0% of non-Aboriginal offenders. The authors posit that discrimination against Aboriginal people may be one reason for the apparent disparity, drawing parallels to other criminal justice settings where Aboriginal offenders are less likely to be diverted from court, such as the policing of traffic offences.

While this difference between Aboriginal and non-Aboriginal people in the unadjusted rate of cannabis cautions is large, there are a few possible explanations for this gap. Firstly, Aboriginal people may be less likely to meet the eligibility criteria for the scheme. For example, they may be more likely to have certain types of prior criminal convictions (such as prior violent offences) or be less likely to admit to the offence because of legal advice[1] or low levels of trust in the police. Strict eligibility criteria, particularly around prior offending, has previously been identified as a barrier to the use of court diversion options for Aboriginal people (AIHW, 2013). Secondly, prior police contacts for offences not explicitly excluded under the scheme (such as non-violent offences) could also influence the police decision to caution offenders, and if Aboriginal people have longer criminal histories for these offences, then this may contribute further to cautioning disparities.

Thirdly, Aboriginal people may be more likely to offend in areas where police are less supportive of the scheme and prefer charging to cautioning. In an audit of the Cannabis Cautioning Scheme in 2011 (Audit Office of NSW, 2011), police claimed that cautioning rates differed between policing jurisdictions partly due to targeted drug operations in some jurisdictions and not others. This implies that cautioning differences between Aboriginal and non-Aboriginal people may not only be explained by differences in the characteristics of offenders but could also be partly due to differences in police practices and/or priorities in the area where the person offends.

Prior research on bias in decision-making

No prior studies have considered the extent to which these explanations account for the apparent disparity in cannabis cautioning rates for Aboriginal and non-Aboriginal offenders. However, several Australian studies have investigated bias in other operations of the criminal justice system, such as youth diversion. In one such study, Luke and Cunneen (1995) examined reasons why only 12.6% of Aboriginal first-time young offenders in NSW received a police caution in 1990 in comparison to 21.8% of their non-Aboriginal counterparts. Despite controlling for age, sex, location, offence type and prior offending in a logistic regression, they still found significant differences in cautioning rates between the two groups.[2] More recent studies have also identified residual disparities in youth cautioning rates by Aboriginality. Allard et al. (2009) examined factors which predicted diversion for a sample of young offenders born in Queensland (QLD) in 1990. After controlling for the effects of age at first contact, sex, number of offences, and offence type Aboriginal young people were still 2.9 times less likely than non-Aboriginal youth to receive a caution in lieu of formal court processing. Snowball (2008) reported similar results for young people from 1985 birth cohorts across NSW, Western Australia (WA), and South Australia (SA). She found that Aboriginal youth were less likely to be cautioned even after controlling for age, sex, current offence characteristics and prior criminal history. Papalia et al. (2019) analysed the effect of Aboriginality on first time youth diversion in a comparable way to the previous authors and discovered a raw disparity of 9.9 p.p. between groups (86.5% of non-Aboriginal vs 76.7% Aboriginal youth diverted). Aboriginal offenders were still less likely to be diverted after controlling for demographic variables (age, gender) and legal factors (number of charges and violent charges), as well as several interaction terms between Aboriginality and other variables. This disparity was most pronounced for nonviolent offending and more severe offending involving three or more violent charges. More recently in NSW, Weatherburn and Thomas (2022) examined a sample of juvenile offenders proceeded against by police between 2010 and 2021 and found that 88.9% of non-Aboriginal young people were cautioned, compared with just 71.5% of Aboriginal young people. After controlling for the influences of offender and offence characteristics as well as policing area[3] effects, the odds of an Aboriginal youth being cautioned were around half (0.57) that of non-Aboriginal youth. The authors also found that while older offenders were cautioned less, the effect of age on the probability of receiving a caution was more pronounced for Aboriginal offenders, and that there was significant variation in cautioning across policing area.

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1   Pritchard et al. (2007) report that the NSW Aboriginal Legal Service advises clients not to admit to any charges at the point of arrest.
2   The magnitude of this disparity is not mentioned in the paper.
3   In NSW, a policing area is known as a Police Area Command (PAC).

Several Australian studies have also investigated racial bias in the context of sentencing, but find only limited evidence of Aboriginal people receiving harsher penalties (once relevant legal factors are controlled for). Snowball and Weatherburn (2006) examined differences in sentencing between guilty Aboriginal and non-Aboriginal adults from 2001 to 2004 in NSW. Across the four-year study period, between 16.6% and 20.1% of Aboriginal offenders were sentenced to prison, compared with between 6.5% and 6.8% of non-Aboriginal offenders. However, they demonstrated that this raw disparity arose due to differences in prior offending and case characteristics. Thorburn and Weatherburn (2018) studied a sample of serious assault offenders between 2009 and 2014 in NSW to determine whether adult Aboriginal offenders were more likely to receive a prison sentence than their non-Aboriginal counterparts, after controlling for age, gender, case characteristics and prior offending. Prior to controlling for relevant covariates, they found that 55% of Aboriginal offenders received a prison sentence, compared with 36% of non-Aboriginal offenders. After controlling for relevant covariates, the difference in the probability of imprisonment was less than 1 p.p. (3.4% of Aboriginal people sentenced vs 2.5% of non-Aboriginal people). Fitzgerald et al. (2021) also investigated differences between Aboriginal and non-Aboriginal people regarding a wide range of sentencing outcomes (imprisonment, fines, probation and good behaviour orders) for domestic violence matters in QLD during 2013/2014. Fitzgerald reports that Aboriginal people were 27 p.p. more likely to be imprisoned, 2 p.p. more likely to be placed on probation, 22 p.p. less likely to be fined, and 6 p.p. less likely to receive a good behaviour order. After controlling for age, gender, prior offending and court location, Aboriginal defendants were more likely to be imprisoned rather than fined (odds ratio [OR] = 2.04), receive a probation order over a fine (OR = 1.38) and less likely to receive a good behaviour order over a fine (OR = 0.64) relative to non-Aboriginal defendants.

Several studies from the United States (U.S.) have also investigated racial disparities in diversion. Schlesinger (2013) used logistic regression analysis to examine racial disparities in pretrial diversion among men charged with felony crimes in metropolitan counties in the U.S. using data from 1990 to 2006. Prosecutors were more likely to grant pretrial diversions to White rather than Black, Latino, Asian, or Native American defendants with similar legal characteristics. MacDonald et al. (2014) use a decomposition model to identify the degree to which demographic variables and criminal history characteristics explain Black-White disparities in both prison commitments for drug offences and court diversion to drug treatment in California. While criminal case characteristics fully explained the disparities in prison sentences, a large share (28%) of the Black-White difference in diversion remained unexplained. Put differently, Black Americans were much less likely to be diverted even after accounting for observed factors. Further, there continued to be significant disparity following the introduction of a sentencing reform which mandated prison diversion for eligible drug offenders.

In summary, there is considerable evidence that racial disparities exist in criminal justice diversion, even after a range of observable factors are accounted for. However, it is hard to know whether these findings would apply in the case of the NSW Cannabis Cautioning Scheme. The criteria for cannabis cautioning are well-defined and could result in police having less discretion compared to other diversionary options, such as youth cautioning. Under the Young Offenders Act 1997 (NSW), for example, police must consider the seriousness of the offence, the degree of violence, the harm caused to the victim and previous offence history when deciding to caution young offenders, however they can also consider "any other matter the official thinks appropriate in the circumstances" (see s.20(3e) of the Young Offenders Act). While authorities are being increasingly encouraged to divert young offenders (Wang et al., 2020), a greater scope for police discretion may mean that these residual disparities are larger than we might expect for cannabis cautioning. Alternatively, these residual disparities may be smaller than we expect if police are less lenient for adults than they are for juveniles.

The current study

So far, no studies have specifically examined the gaps in access to the Cannabis Cautioning Scheme for Aboriginal and non-Aboriginal adults in NSW. This study aims to shed light on this issue by answering the following research questions:

1. How much do cannabis cautioning rates differ between Aboriginal and non-Aboriginal offenders?

2. Can any differences in cautioning rates be explained by differences in eligibility and/or other factors?

3. Can any differences in cautioning rates be explained by variation in police practice between Police Area Commands (PACs)?

METHOD

Data

We used an extract of recorded crime data from the NSW Police Force COPS database which consisted of 40,145 events[4] involving 28,432 adult offenders who were proceeded against by police for a cannabis use/possession offence between January 2017 and February 2020. The COPS data was linked to the NSW Bureau of Crime Statistics and Research's (BOCSAR) Reoffending Database (ROD) to obtain further information on offenders' prior offending and demographics.

Of the 40,145 events involving adult offenders proceeded against for a cannabis use/possession incident, 1,332 events or 3.3% had no information about the Aboriginality of the person of interest. These records were therefore removed from the sample and the remaining 38,813 events relating to 27,127 adult offenders comprised the final sample used in the analysis.

We also examine a subset of 18,395 events relating to 15,869 adult offenders who met all observable eligibility criteria to receive a cannabis caution. Specifically, offenders proceeded against for a cannabis use/possession incident must not have: 1) committed a prior drug, violent or sexual offence; 2) been issued two or more previous cannabis cautions; or 3) been involved in any other criminal offence at the point of cautioning, for which a brief of evidence would be submitted. We then drop 38 observations of events with no PAC records, resulting in an analysis subsample of 18,357 events relating to 15,846 offenders who met all observable eligibility criteria.

From January 2022, the NSW Police Force introduced mandatory recording of a person's Aboriginality at the time of charging. This may have improved the reporting accuracy of Aboriginality in police data, which could plausibly affect our results if it resulted in substantially different classifications. To test the robustness of our estimates to this change in the identification of Aboriginal people we use a second dataset of 3,309 events relating to 3,034 offenders proceeded against by police for a cannabis use/possession offence between 14 January 2022 and 30 June 2022 (presented in Appendix B). Analyses using this data consider both Aboriginality recorded at the index contact as well as ever-recorded Aboriginality.

Variables

The key outcome variable in this study is the probability of receiving a cannabis caution. This variable was coded zero if an offender was proceeded against to court for cannabis use/possession and one if they were issued a cannabis caution by police.

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4 An event is a set of one or more related criminal incidents reported to or detected by police and recorded on the NSW Police Force's COPS database.

Our group indicator is Aboriginality (one if ever recorded by police as Aboriginal or Torres Strait Islander or both Aboriginal and Torres Strait Islander, zero otherwise).

We also observe several factors related to an offender's eligibility for the scheme. These are: (1) whether an offender had two or more previous cannabis cautions (Yes/No); (2) whether an offender was involved in any other criminal offence at the time of the event (Yes/No); and (3) whether the offender had a prior drug, violent or sexual offence[5] (Yes/No). In addition to this, we construct a flag for whether the offender met all these eligibility criteria (Yes/No). We also consider the type of prior drug, violent or sexual offence(s).[6]

Note that our measure of eligibility criteria may be different to the measure used by police, for two main reasons. Firstly, there are no published guidelines on the Cannabis Cautioning Scheme which specify the exact offences considered as drug related, or violent/sexual in nature. This means that the set of prior offences we categorise as drug, violent or sexual may differ to classifications used by police. Secondly, there is no guidance on whether offenders are ineligible for a caution if they have ever committed a prior drug, violent or sexual offence, or if offenders are only ineligible if they have committed such offences more recently (e.g., in the last 5 or 10 years). While we use an ever measure of prior offence types to determine eligibility status, the police may use a different measure. Consequently, offenders we categorise as ineligible for a cannabis caution may be deemed eligible by the NSW police or vice versa.

Our dataset contains a range of other covariates, including:

Demographic characteristics: Age at index contact (coded 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55 years and over); gender; remoteness of the offender's residential postcode (ABS, 2016a); socioeconomic index for the offender's residential postcode (categorised as quartiles from least to most disadvantaged) (ABS, 2016b); and dummy variables indicating the responsible PAC or police district of the incident of the most serious offence at index contact.

Other criminal history variables: Prior finalised court appearances with a proven offence/s (coded 0, 1, 2, and 3 or more); whether the offender has ever received a full-time prison sentence or control order (Yes/No); and whether the offender has prior offences which are not classified as drug, violent or sexual offences in the last five years. Specifically, individual dummies (Yes/No) were constructed to indicate whether an offender has a prior proven dangerous or negligent act endangering persons offence (ANZSOC 04), prior proven robbery, extortion or related offence (ANZSOC 06), prior proven theft or related offence (ANZSOC 08), prior proven prohibited and regulated weapons and explosives offence (ANZSOC 11), prior proven traffic and vehicle regulatory offence (ANZSOC 14), or prior proven offence against justice procedures, government security and government operations (ANZSOC 15).

Index contact variables: Month of index contact; year of index contact.

Statistical analysis

We begin our analysis by computing descriptive statistics for the entire sample of Aboriginal and non-Aboriginal people proceeded against for a cannabis use/possess offence in the study period. We also describe the proportions of Aboriginal and non-Aboriginal offenders in this sample who meet the observable eligibility criteria for the Scheme.

In subsequent analyses we focus only on offenders who are eligible to receive a cannabis caution. For this sample, we use the Kitagawa-Oaxaca-Blinder (KOB) decomposition method (Blinder, 1973; Kitagawa, 1955; Oaxaca, 1973) to explain the disparity in cannabis cautioning between Aboriginal and non-Aboriginal people with an eligible offence. The KOB decomposition is commonly used to analyse

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5   This encompasses the Australia and New Zealand Standard Offence Classification (ANZSOC) divisions 01, 02, 03, 06, and 10. For more information regarding ANZSOC interested readers are directed to Australian Bureau of Statistics ([ABS], 2011).
6   This includes ANZSOC subdivisions 0111, 0121, 0131, 0211, 0212, 0213, 0291, 0299, 0311, 0312, 0321, 0322, 0323, 0329, 0611, 0612, 0621, 1011, 1012, 1022, 1031, 1032, 1041, 1042 and 1099.

factors which explain raw differences in outcomes between groups. A popular application of the method is in understanding differences in wages between men and women (see Weichselbaumer & Winter-Ebmer's (2005) for a meta-analytic summary of this literature). The KOB decomposition splits disparities in outcomes between two groups into an "explained" and "unexplained" component. In the context of this study, the explained component quantifies how much of the raw cautioning disparity between Aboriginal and non-Aboriginal people can be attributed to differences in offender characteristics between groups. The unexplained component measures how much of the raw cautioning difference arises due to omitted variable bias and/or discrimination.

We apply the KOB decomposition in several steps. First, we estimate the probability of receiving a cannabis caution separately for individuals i in different groups g (i.e., Aboriginal and non-Aboriginal offenders eligible to receive a cannabis caution) using a linear regression model:[7]

$$C_{gi} = \beta_g X_{gi} + \epsilon_{gi} \qquad (1)$$

where $g = \{a,n\}$ represents Aboriginal and non-Aboriginal groups respectively, C_{gi} is the probability of receiving a cannabis caution and X_{gi} are observed characteristics (including demographic and prior offending variables and PAC dummies) of an individual i of group g. This enables us to estimate β_g, the vector of coefficients which describes, on average, how a person's characteristics relate to their likelihood of cautioning.

Second, we combine the average characteristics of each group X_g and our estimates for how characteristics in each group influence the likelihood of a caution ($\hat{\beta}_n$) to decompose cautioning differences between Aboriginal and non-Aboriginal eligible offenders as follows:

$$\overline{C}_a - \overline{C}_n = (\overline{X}_a - \overline{X}_n)\hat{\beta}_n + (\hat{\beta}_a - \hat{\beta}_n)\overline{X}_a \qquad (2)$$

The first term, $\overline{C}_a - \overline{C}_n$ is the difference in average cautioning rates for Aboriginal and non-Aboriginal people (the raw observed disparity in cautioning rates). The next term, $(\overline{X}_a - \overline{X}_n)\hat{\beta}_n$ measures the difference in cautioning between groups arising from differences in the observed characteristics of Aboriginal and non-Aboriginal people in our sample when considering the same β_g (i.e., holding the relationship between characteristics and cautioning constant). In other words, this measures differences in predicted cautioning rates of average Aboriginal and non-Aboriginal people given their respective observed characteristics if everyone was treated as if they were non-Aboriginal.[8] We will refer to this as the explained component of the raw cautioning difference.

The second term, $(\hat{\beta}_a - \hat{\beta}_n)\overline{X}_a$ represents the difference in cautioning between groups which arises due to differences in the estimated coefficients for both groups. In other words, it takes an individual with the average characteristics of an Aboriginal person and compares their predicted cautioning probability if they were Aboriginal to their predicted cautioning probability if they were non-Aboriginal. We will refer to this as the *unexplained* component of the raw cautioning difference. This component captures all the effects of group differences in unobserved variables. This is particularly important in our case because we lack data on some eligibility criteria such as the amount of cannabis in an offender's possession and an offender's willingness to admit guilt at the time of the offence.

We also compute a detailed decomposition that further breaks down the explained cautioning difference into explained differences attributed to each individual observed characteristic. It extends equation (2) by considering each individual characteristic, X_k and its corresponding effect on cautioning β_k for each variable k. This allows us to identify variables which contribute most to the disparity in cannabis cautioning rates between Aboriginal and non-Aboriginal people.

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7   Standard errors are clustered at the offender level to account for the fact that observations on the same offender are correlated, but independent between different offenders. As a robustness test, we estimate a logit decomposition using the method described by Yun (2004).
8   A non-Aboriginal reference group corresponds to a counterfactual where in the absence of discrimination, Aboriginal offenders are cautioned in the same way that non-Aboriginal offenders are currently cautioned (see Lee, 2015). As a robustness test, we estimate a pooled decomposition which uses reference coefficients from a pooled Aboriginal and non-Aboriginal group. For more details, see Oaxaca and Ransom (1994).

RESULTS

Cautioning rates and eligibility

Table 1 presents the proportion of people in the entire sample of 38,813 observations (which we refer to as the "main sample") who met all observed eligibility criteria for the Cannabis Cautioning Scheme, as well as the proportion of non-eligible Aboriginal and non-Aboriginal offenders. As noted earlier, an offender is considered eligible for a caution if they are not involved in another criminal offence at the time of detection, have no more than one prior cannabis caution, and have no prior drug, violent or sexual offences.[9]

Table 1. Proportion of sample who were eligible to receive a cannabis caution by Aboriginality, January 2017 – February 2020

Eligibility for a caution	Total		Aboriginal		Non-Aboriginal	
	n	%	n	%	n	%
Eligible	18,395	47.4	1,769	21.6	16,626	54.3
Not eligible	20,418	52.6	6,402	78.4	14,016	45.7
Total	38,813	100.0	8,171	100.0	30,642	100.0

Of the 38,813 events involving a cannabis possession offence during the study period, nearly half (47.4%; n = 18,395) were eligible for a cannabis caution. However, only one in five (21.6%; n = 1,769) Aboriginal people in the sample were eligible for a cannabis caution compared with more than half of all non-Aboriginal people.

In Figure 1 we show the eligibility criteria met by Aboriginal and non-Aboriginal offenders in the sample. That is, the proportions in each group who did not have another criminal incident on the event, had fewer than two prior cannabis cautions or had no prior drug, violent or sex offence. As seen from Figure 1, Aboriginal people proceeded against for a cannabis offence were less than twice as likely to have no prior drug, violent or sexual offence relative to non-Aboriginal people (34.0% vs 71.0% respectively) and were also less likely to have not committed another offence at the same time as being caught for cannabis possession (63.0% vs 75.0% respectively). A large percentage of offenders in both groups had less than two prior cannabis cautions (98.0% of Aboriginal people vs 96.0% of non-Aboriginal people).

Figure 2 presents the cumulative eligibility in each group, that is the proportion of people in each group who met one, two, or three observed eligibility criteria.[10] Around 52.0% of Aboriginal people with a cannabis offence and 33.5% of non-Aboriginal people with a cannabis offence met two of the observed eligibility criteria for a caution. However, only 21.6% of Aboriginal people met all three eligibility criteria and were thus eligible to receive a cannabis caution, while a much larger proportion (54.3%) of non-Aboriginal people met all three cautioning criteria. Taken together, Figures 1 and 2 imply that Aboriginal people are less likely to be eligible to receive a cannabis caution because they are much more likely to have a prior history of drug, violent and sex offending, and to a lesser extent, because they are more likely to be charged with another offence at the same time as being stopped for cannabis use/possession.

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9 Note that we do not have data on all eligibility criteria, such as the amount of cannabis the offender possesses or whether the offender admits to the offence. Due to this, we may overcount the number of offenders eligible for a cannabis caution.

10 The percentages in Figure 2 do not add to 100 as the category of offenders who meet none of the eligibility criteria (154 non-Aboriginal people vs 36 Aboriginal people) were not included in the graph.

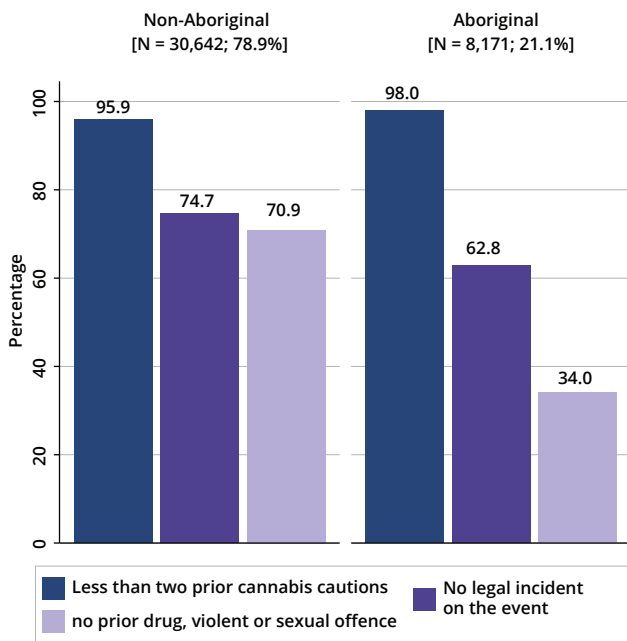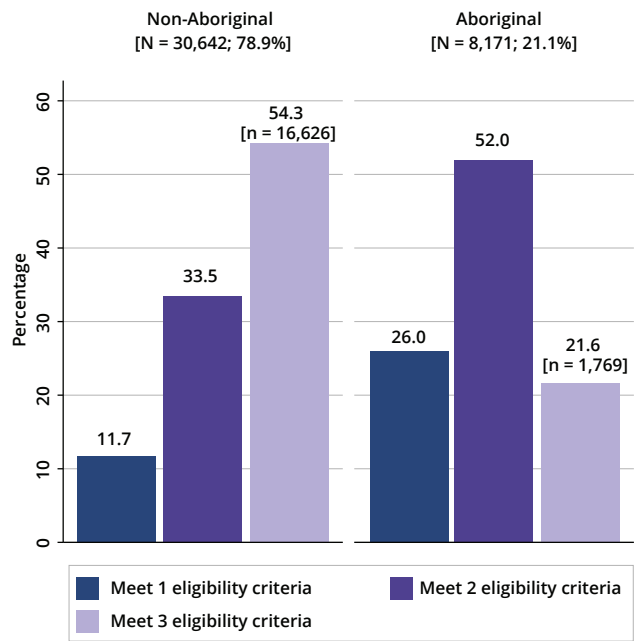**Figure 1. Eligibility criteria met by Aboriginality, main sample**

Figure 2. Cumulative eligibility by Aboriginality, main sample

We examine categories of drug, violent and sexual prior offences by Aboriginality in Figure 3.[11] Across the entire sample, offenders were most likely to have a prior proven drug possession offence than any other type of offence. However, across all offence types, a higher proportion of Aboriginal offenders had a prior conviction compared with non-Aboriginal offenders. Over one-third of Aboriginal offenders had a prior proven possess illicit drug offence, while just 16.5% of non-Aboriginal offenders had previously been found guilty of the same offence. The next most common priors were stalking, common assault, and serious assault resulting in injury. Aboriginal people were between three and four times more likely than non-Aboriginal people to have a prior record for these types of offences. The remaining categories of prior offences are somewhat similar between groups but remain higher for Aboriginal people.

Figure 3. Prior drug, violent and sexual offences by Aboriginality, main sample
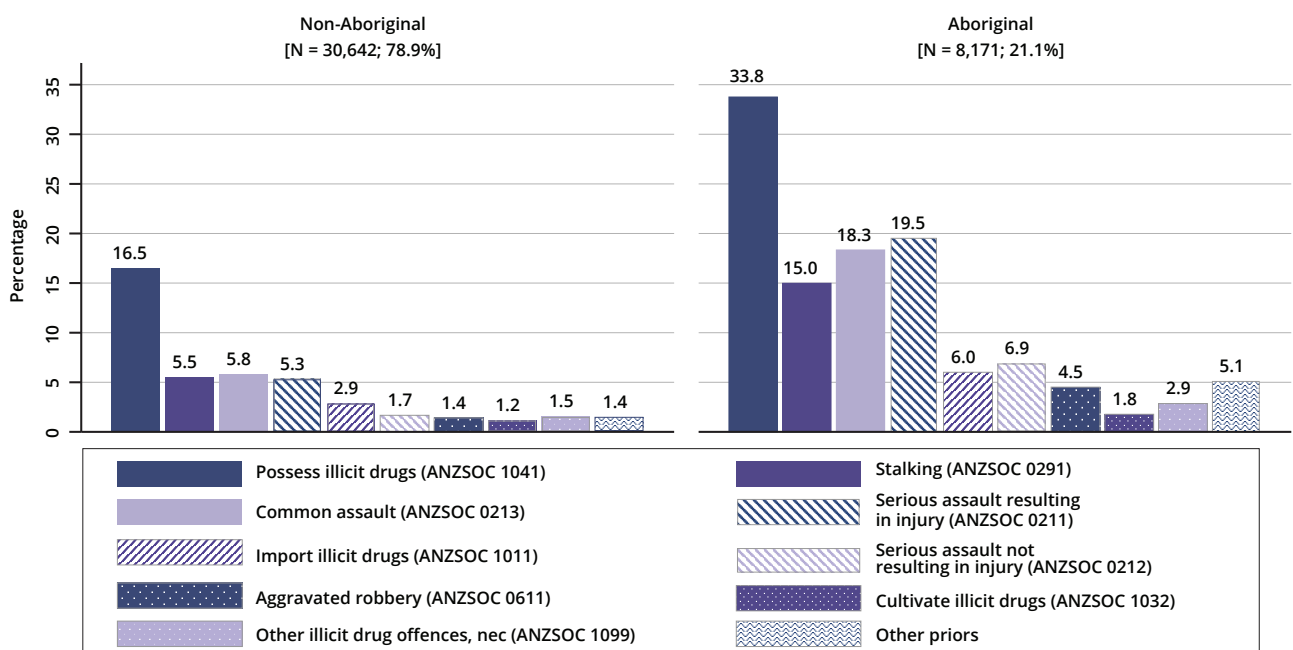
11 Offenders may possess priors across multiple reported offences. The "other priors" category includes ANZSOC codes 0121, 0131, 0299, 0311, 0312, 0321, 0322, 0323, 0329, 0612, 0621, 1011, 1012, 1022, 1031 and 1042.

Table 2 shows the percentage of offenders in the sample who received a cannabis caution by Aboriginality and observed eligibility, as well as the difference in cautioning rates between Aboriginal and non-Aboriginal people. Overall, 11.7% of Aboriginal offenders were issued cautions compared with 43.9% of non-Aboriginal offenders, resulting in a 32.2 p.p. disparity in cautioning rates between the two groups. A small proportion of offenders who we classify as ineligible based on the observable criteria in our dataset received a caution (4.2% vs 8.4% for Aboriginal and non-Aboriginal people, respectively). This could be due to differences in the way we define the Scheme's eligibility criteria relative to the NSW police, or police applying their discretion in cautioning. As expected, offenders who are eligible to be cautioned are more likely to be cautioned relative to the entire sample (39.5% and 73.9% for Aboriginal and non-Aboriginal people, respectively) but a disparity in cautioning rates of 34.4 p.p. still exists between Aboriginal and non-Aboriginal people. The remainder of our results focus on the 18,357 offenders who were eligible to receive a cannabis caution (the "eligible subsample") and investigates factors that may be contributing to the 34.4 p.p. further disparity.

Table 2. Percentage who received a cannabis caution by eligibility, Aboriginal vs non-Aboriginal offenders, main sample

	Total	Aboriginal	Non-Aboriginal	Difference
Caution rate	37.1	11.7	43.9	-32.2***
Caution rate for eligible offenders	70.5	39.5	73.9	-34.4***
Caution rate for ineligible offenders	7.0	4.2	8.4	-4.2***

Note. Stars indicate statistical significance at a variety of conventional thresholds of statistical significance: *** $p<0.001$, ** $p<0.01$, * $p<0.05$.

Cannabis cautioning among eligible offenders

Characteristics of Aboriginal and non-Aboriginal people in the sample who were eligible to receive a cannabis caution are compared in Table 3. All differences are significant at the 5% significance level. Relative to non-Aboriginal offenders, a higher proportion of Aboriginal offenders were aged 45 and older and a higher proportion were female. Aboriginal people eligible for a caution were also more likely to live in regional and socioeconomically disadvantaged areas and were more likely to have prior finalised court appearances and prior prison episodes relative to non-Aboriginal offenders who met the criteria for a cannabis caution. For instance, Aboriginal offenders were 37.3 p.p. more likely to have three or more prior court appearances and around nine times more likely to have three or more prior prison sentences compared with non-Aboriginal people (7.6% for Aboriginal people vs 0.8% for non-Aboriginal people). Differences in prior offence types between the groups were largest for prior offences against justice procedures (22.3 p.p.), as well as prior traffic offences (19.8 p.p.), theft offences (19.1 p.p.), public order offences (14.9 p.p.) and property damage offences (10.7 p.p.).

Table 3. Legal and demographic characteristics of Aboriginal and non-Aboriginal people eligible for a cannabis caution

Variable	Aboriginal (%) (n=1,753)	Non-Aboriginal (%) (n=16,604)	Difference (p.p.)
Age categories			
18-24	42.73	53.25	-10.53***
	(0.39)	(1.18)	
25-34	24.19	25.26	-1.07***
	(0.34)	(1.02)	
35-44	16.14	10.96	5.18***
	(0.24)	(0.88)	
45-54	12.49	6.70	5.79***
	(0.19)	(0.79)	
55+	4.45	3.82	0.63***
	(0.15)	(0.49)	
Gender			
Male	70.56	83.40	-12.84***
	(0.29)	(1.09)	
Female	29.44	16.56	12.84***
	(0.29)	(1.09)	
ABS remoteness area (2016)			
Major cities	42.21	71.72	-29.51***
	(0.35)	(1.18)	
Inner regional	34.68	15.42	19.27***
	(0.28)	(1.14)	
Outer regional	14.20	3.20	11.00***
	(0.14)	(0.83)	
Remote or very remote	3.94	0.25	3.69***
	(0.04)	(0.46)	
Missing remoteness	4.96	9.41	-4.44***
	(0.23)	(0.52)	
SEIFA quartile			
Q1 - Most disadvantaged	37.36	24.28	13.09***
	(0.33)	(1.16)	
Q2	32.06	20.08	11.98***
	(0.31)	(1.11)	
Q3	19.74	23.13	-3.39***
	(0.33)	(0.95)	
Q4 - Least disadvantaged	5.88	23.08	-17.20***
	(0.33)	(0.56)	
Missing	4.96	9.44	-4.47***
	(0.23)	(0.52)	
Number of prior finalised court appearances			
0	24.30	67.45	-43.15***
	(0.36)	(1.02)	
1	15.06	13.83	1.23***
	(0.27)	(0.85)	
2	11.07	6.41	4.66***
	(0.19)	(0.75)	
3+	49.57	12.32	37.26***
	(0.26)	(1.19)	

Table 3. Legal and demographic characteristics of Aboriginal and non-Aboriginal people eligible for a cannabis caution (continued)

Variable	Aboriginal (%) (n=1,753)	Non-Aboriginal (%) (n=16,604)	Difference (p.p.)
Number of prior finalised prison sentences			
0	81.18	96.85	-15.84***
	(0.14)	(0.93)	
1	6.79	1.65	5.14***
	(0.10)	(0.60)	
2	4.39	0.66	3.73***
	(0.06)	(0.49)	
3+	7.64	0.84	6.81***
	(0.07)	(0.63)	
Prior proven public order offence (ANZSOC 113) in last 5 years	17.57	2.63	14.94***
	(0.12)	(0.91)	
Prior proven dangerous or negligent act endangering persons offence (ANZSOC 04) in last 5 years	5.19	1.76	3.43***
	(0.10)	(0.54)	
Prior proven theft offence (ANZSOC 08) in last 5 years	23.93	3.82	19.11***
	(0.15)	(1.00)	
Prior proven weapons offence (ANZSOC 11) in last 5 years	8.73	2.13	6.60***
	(0.11)	(0.67)	
Prior proven property damage offence (ANZSOC 12) in last 5 years	13.92	3.26	10.66***
	(0.14)	(0.83)	
Prior proven traffic offence (ANZSOC 14) in last 5 years	32.86	13.09	19.76***
	(0.26)	(1.12)	
Prior proven driving while disqualified or suspended offence (ANZSOC 1411) in the last 5 years	13.92	5.31	8.61***
	(0.17)	(0.83)	
Prior proven offence against justice procedures (ANZSOC 15) in last 5 years	28.12	5.81	23.32***
	(0.18)	(1.07)	

Note. Standard errors in parentheses. Stars indicate statistical significance at a variety of conventional thresholds of statistical significance: *** $p<0.001$, ** $p<0.01$, * $p<0.05$. Differences between cells may not equal due to rounding error.

Figure 4 illustrates the distribution in overall cautioning rates across PACs, and Figure 5 shows the distribution in cautioning disparity between Aboriginal and non-Aboriginal offenders across PACs.[12] These data relate to the subsample of offenders who were eligible to receive a cannabis caution. As seen in Figure 4, there is substantial variation in the rate of cannabis cautioning by PAC, ranging from 35.0% to 85.0%, with a median PAC cautioning rate of 63.0%. Similarly, from Figure 5 we see that the difference in cautioning rates between Aboriginal and non-Aboriginal people is much larger in some PACs compared with others. Rates of disparity in cautioning were left-skewed and ranged from -55.0% to -5.0%, with a median of -23.0% and an average of -34.7%. However, while some PACs exhibit large differences in cautioning rates for Aboriginal and non-Aboriginal people, this simple comparison does not account for differences in offender and offence characteristics across PACs. It is possible that those PACs with low cautioning rates are also areas where there is a higher proportion of offenders with longer criminal histories. Our decomposition results, reported in the next section, distinguish PAC proclivities from the composition of offenders proceeded against in those areas.

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12   We reduce the influence of PACs with relatively few Aboriginal offenders by excluding PACs with 10 or fewer Aboriginal offenders proceeded against for a cannabis use/possession offence.

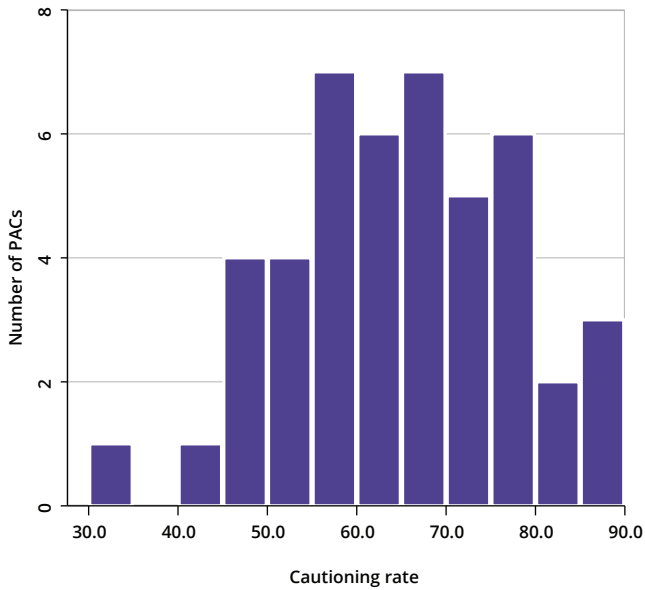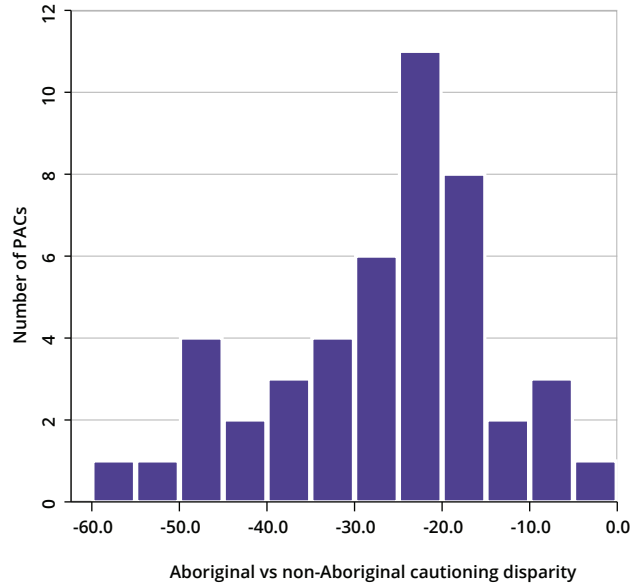**Figure 4. Cautioning rates by PAC, eligible subsample**

Figure 5. Difference in probability of being cautioned for Aboriginal and non-Aboriginal people by PAC, eligible subsample

Kitagawa-Oaxaca-Blinder decomposition results

Figure 6 shows point estimates and 95% confidence intervals for the detailed KOB decomposition.[13] The regression output used to construct Figure 6 is available in Appendix B. The raw disparity in cautioning rates between Aboriginal and non-Aboriginal offenders who are eligible to receive a cannabis caution is 34.4 p.p. The explained component makes up most of this raw difference (31.5 p.p. or 92% of the raw difference), which means that differences in observable characteristics contribute to much of the 34.4 p.p. disparity in cautioning rates between Aboriginal and non-Aboriginal people. The unexplained component makes up the remaining 2.9 p.p. (or 8%) of the raw difference, implying that Aboriginal people are still cautioned less than non-Aboriginal people even when both groups have the same observable characteristics. In practice however, the unexplained component includes unobserved characteristics, and it is not possible to identify the degree to which unobserved characteristics or discrimination individually contribute to the unexplained component. However, since we do not observe all eligibility criteria, we would expect unobserved characteristics to contribute to some of the unexplained component.

Factors related to criminal history, but not explicit in the Scheme's criteria, drive much of the explained difference between Aboriginal and non-Aboriginal people in cannabis cautioning rates. In particular, differences between groups in the number of prior court appearances, the type of prior offending (for those priors unrelated to eligibility) and whether an offender has previously been to prison explain 18.8 p.p., 4.0 p.p., and 1.7 p.p. of the raw disparity, respectively. This is because police are more likely to charge rather than caution eligible offenders with more extensive and severe prior offending histories and on average, Aboriginal offenders have more prior court appearances and are more likely to have been imprisoned than non-Aboriginal offenders.

Non-legal factors contribute to the remainder of the explained component. Firstly, PAC fixed effects, which reflect PAC-level factors that influence cautioning decisions (e.g., fixed budgeting allocations, PAC culture or commander preferences) explain 5 p.p. of the raw disparity in cautioning rates of Aboriginal and non-Aboriginal people. This implies that Aboriginal people tend to live in PACs which are more likely to charge

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13   Our results are robust to alternative model specifications, different ways of measuring Aboriginality, and when using a more recent (but smaller) dataset (see Appendices A and B).

rather than caution cannabis use/possession offenders. Another 2 p.p. of the raw disparity is explained by demographic characteristics including age, gender, and remoteness and socioeconomic status of area of residence. This could be because demographic variables are correlated with unobservable eligibility criteria (such as willingness to admit to the cannabis offence). Alternatively, Aboriginal people may be more likely to belong to demographic groups that police are less likely to issue a cannabis caution to. Finally, month-year fixed effects, which capture changes in policing and attitudes towards cautioning over time, do not explain any of the group differences in cautioning rates.

Figure 6. Detailed Kitagawa-Oaxaca-Blinder decomposition results, eligible subsample
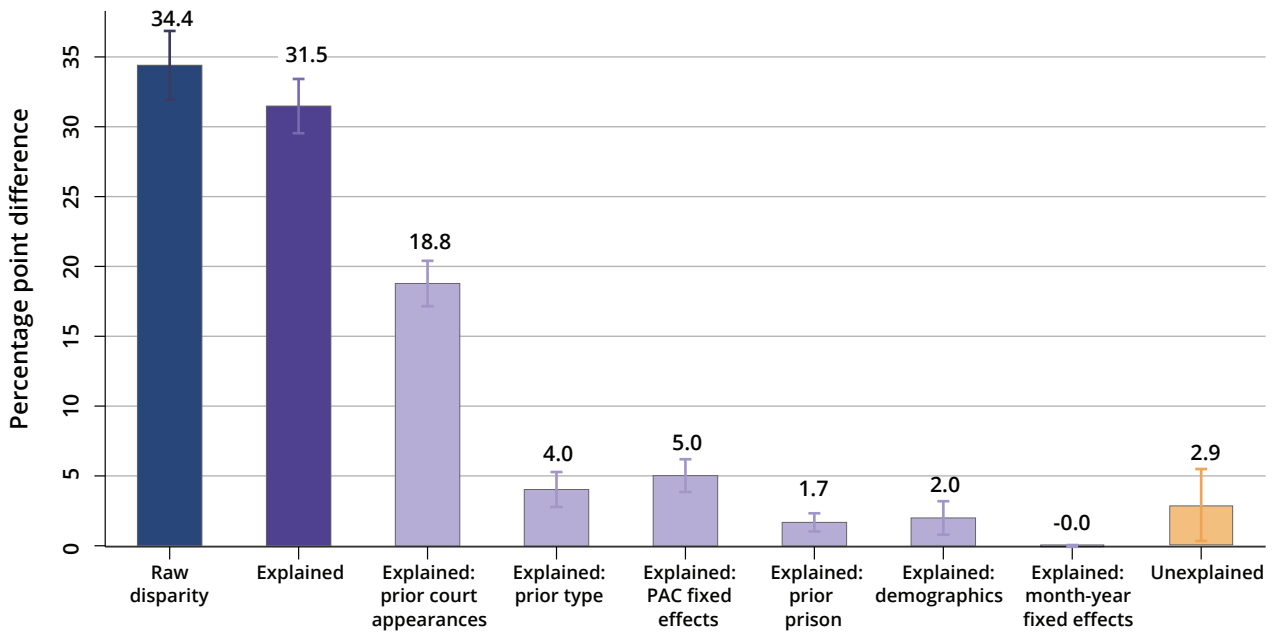
DISCUSSION

This study aimed to examine the disparity in the rate of cautioning for Aboriginal and non-Aboriginal people proceeded against by police for cannabis use/possession and identify whether eligibility criteria, PAC, legal and other observed factors are associated with this difference.

We reach two main conclusions. First, we confirm that there is a large gap (of 32.2 p.p.) in unadjusted cautioning rates between Aboriginal and non-Aboriginal people detected in possession of cannabis. This result is consistent with the 30.3 p.p. disparity in unadjusted cautioning rates reported by McGowan and Knaus (2020) for the period 2013-2017. However, we show that this difference in cautioning of Aboriginal and non-Aboriginal people is mostly due to differences in eligibility for the Scheme. Specifically, 78.4% of Aboriginal adults (n=6,402) in our study who were proceeded against for possession of cannabis did not meet at least one of the eligibility criteria specified under the Cannabis Cautioning Scheme. This compares with only 45.7% of non-Aboriginal people proceeded against for cannabis possession over the same period. This difference is primarily driven by the fact that Aboriginal people more often had a prior drug, violent, or sexual offence (including prior drug possession, intimidation/stalking, common assault, and serious assault offences resulting in harm among others) and/or a concurrent offence at the time of detection. This result reinforces previous research suggesting that eligibility criteria are often a barrier to diversion for Aboriginal people (AIHW, 2013; Joudo, 2008).

Second, even among offenders who were eligible for a cannabis caution, we observe a large disparity (34.4 p.p.) in cautioning rates for Aboriginal and non-Aboriginal people. Most of this difference (92% or 31.5 p.p.) can be explained by differences in observed characteristics of the offenders. Notably, prior offending unrelated to the Scheme's explicit exclusion criteria, such as prior jail time and the level and type of prior general offending, explained 71% of the raw disparity. Since Aboriginal people have higher than average rates of contact with the criminal justice system and therefore longer criminal histories, then this can be seen as a form of indirect bias that limits Aboriginal people's access to this formal diversion pathway. Meanwhile, only a small amount of the variation in cannabis cautioning rates could be attributed to the proclivities of different PACs to issue cautions. This mirrors Ringland and Smith's (2013) finding that variation in youth diversion by PAC is relatively small after controlling for eligibility, person, and case level variables. We also find that a small proportion of the difference in cautioning rates for Aboriginal and non-Aboriginal adults was due to demographic (non-legal) factors. This could indicate that either police exercise discretion to caution based on age, gender, and socioeconomic factors, or alternatively, that these factors may be correlated with omitted variables affecting eligibility. For offenders with similar observable characteristics, Aboriginal adults remained slightly (2.9 p.p.) less likely to receive a cannabis caution. However, it is not possible to determine the degree to which the unexplained component is driven by discrimination or unobserved eligibility criteria (including the amount of cannabis seized and/or the likelihood of admitting to the offence).

Our finding that only a small component of the difference in cautioning outcomes for Aboriginal people can be explained by overt differential treatment of Aboriginal people diverges from results reported in previous studies of bias in the criminal justice system. In particular, several Australian studies have documented the existence of significant racial bias in youth diversion from court (see for example Allard et al. 2009; Papalia et al., 2019; Snowball, 2008; Weatherburn & Thomas, 2022). Our differing results may occur due to differences in the composition of the study samples (adults vs. young offenders) or the nature of offending being considered (low-level drug offending vs. general offending). However, it is also possible that they reflect differences in how the eligibility criteria for diversion is specified. In NSW, police can consider "any other matter" they think appropriate when deciding whether to caution a young person under the Young Offenders Act. Weatherburn and Thomas (2022) argue that this may "open the door to a consideration of factors that are irrelevant and potentially prejudicial to the question of whether a young offender should be cautioned" (pp. 30). In contrast, the eligibility criteria for the Cannabis Cautioning Scheme provides much clearer guidelines for police, limiting the amount of discretion they can apply. The divergent findings may also be in part due to the way in which cautions are issued for adults and young people. Cannabis cautions are issued on the spot once a person's eligibility has been established and are accompanied by a health intervention where police encourage the person to seek treatment. On the other hand, cautions under the Young Offenders Act are typically issued at a police station, an intimidating environment which may reduce the willingness of a young Aboriginal person to admit to the offence.

While we find that only a small amount of the disparity can be explained by differences in how Aboriginal offenders are dealt with by police (versus their characteristics), not receiving a caution could have significant costs for affected individuals. The accumulation of convictions for minor drug offences could render individuals ineligible for other diversionary or therapeutic options, resulting in further court appearances, harsher penalties and potentially poorer social outcomes. There is certainly precedent for this considering previous work by Shanahan (2017) which documents benefits associated with cautioning, including a greater likelihood of employment compared to those not cautioned. Thus, policymakers should consider whether amendments can be made to the Scheme to minimise the potential for direct or indirect bias in the cautioning of Aboriginal people.

The fact that over the 3-year period examined, more than 6,000 Aboriginal people caught with cannabis were ineligible for the Scheme is concerning. Raw cautioning disparities between Aboriginal and non-Aboriginal people could potentially be reduced in NSW if consideration was given to relaxing or removing the requirement that offenders must have no prior drug, violent, or sexual offences. Illicit drug diversion programs operating in other Australian jurisdictions, including Victoria (VIC) and SA (Hughes & Ritter, 2008), have already removed these types of barriers to access. However, amendments to the eligibility

criteria on their own may not be sufficient to address the barriers facing Aboriginal people in accessing the Scheme given that police can still exercise their discretion in cases where a person is deemed eligible for a cannabis caution. We find that prior offending, unrelated to the Scheme's explicit eligibility criteria, is associated with much of the explained difference in cautioning rates of eligible Aboriginal and non-Aboriginal people. In particular, eligible Aboriginal people with more prior court appearances for general offending and any prior prison sentence were much less likely to be cautioned. Notably, this element of discretionary police practice is not referenced in the Cannabis Cautioning Scheme criteria. More explicit guidelines or training for NSW police regarding these discretionary factors could further reduce disparity in cautioning, as well as avoid any confusion on the part of front-line officers (Bronitt & Stenning, 2011). Alternatively, police could follow the approach of the QLD and SA cannabis diversion programs by removing officer discretion altogether and mandating that all offenders eligible for diversion be cautioned.

The chief limitation of our study is that we cannot observe two (arguably critical) eligibility criteria for the Scheme: (1) the amount of cannabis that the person possesses at the time of detection; and (2) the offender's willingness to admit to the offence and consent to being cautioned. The latter may be a particularly important issue for Aboriginal people given low levels of trust in the criminal justice system and police among members of this community (Jones et al., 2002). Thus, we cannot identify whether the unexplained disparity is due to discrimination or differences in these unobserved eligibility criteria. Furthermore, if these unobserved eligibility criteria are correlated with observable characteristics (such as remoteness area, SEIFA quartile or PAC), then they may also bias the degree to which observables explain cautioning differences. For instance, PACs would appear to be harsher (i.e., more likely to charge) than other PACs if Aboriginal people caught with cannabis in these PACs are also less likely to admit to the offence. It is important to note that were we were able to observe all eligibility criteria, then we would have a smaller sample of eligible offenders for our KOB decomposition analysis. Depending on how many offenders are rendered ineligible by these criteria in each group, the unexplained component could be higher or lower than that reported here. A qualitative study could help to determine the degree to which willingness to admit to the offence and/or the amount of cannabis detected influences cautioning rates for Aboriginal and non-Aboriginal people, and whether relaxing these eligibility criteria would have additional benefits in terms of increasing diversion rates.

A further limitation is that our main results are derived from data collected prior to the mandatory recording of Aboriginality by police. In January 2022, the NSW Police Force issued a mandate for all police officers to ask all accused whether they identify as Aboriginal (Rawsthorne & Gooley, 2022). This resulted in a significant reduction in the proportion of offenders where Aboriginality was unknown and an increase the proportion who identified as Aboriginal. To assess whether this improvement in recording yielded different results, we repeated the analysis for persons charged with a cannabis possession offence between January and June 2022 (see Appendix B1) but found no meaningful change. Nevertheless, if the accuracy of recording of Aboriginality improves further it is possible that the current results may not hold. Disparity in cautioning rates should therefore continue to be monitored.

Importantly, our study only considers racial bias in police decisions to issue a caution for low-level drug offences. It does not consider discrimination at other points in the criminal justice system or the impact of organisational policies or structures that may have a differential impact on Aboriginal people. Furthermore, it does not consider "upstream" bias or disadvantage which may contribute to higher levels of Aboriginal prior offending. As evident from our results, prior criminal record drives much of the racial differences in eligibility and access to diversion for eligible offenders. However, some scholars argue that the disproportionately high rates of contact with the criminal justice system that are observed for Aboriginal people can be attributed to discrimination and over policing of Aboriginal communities (see Blagg et al, 2005; Sentas & Pandolfini, 2017). To some extent, our results may be driven by "upstream" racial bias, such as in youth diversion from court (see Allard et al. 2009; Papalia et al., 2019; Snowball, 2008; Weatherburn & Thomas, 2022), or prior disadvantage (see Justice Health & Forensic Mental Health Network and Juvenile Justice NSW, 2017), which may contribute to Aboriginal people in our sample on average, having more prior offences than non-Aboriginal people. While we investigate how differences in observed characteristics (e.g., priors) influence eligibility and rates of diversion for Aboriginal and non-

Aboriginal people, we do not consider why such differences in observables arise in the first place. Future research into upstream bias and disadvantage may shed light on factors which prevent adult Aboriginal offenders from accessing court diversion programs.

While we find no evidence of bias at the point of cautioning, policymakers should be cognisant of the large influence of prior offending in determining access to cautioning. Prior criminal history not only renders the majority of Aboriginal offenders ineligible to be cautioned but is also the main factor considered by police when exercising their discretion to caution eligible offenders. Without addressing factors which cause higher levels of Aboriginal involvement in the criminal justice system, amending the strict eligibility criteria for the Scheme, or reducing scope for police discretion, the Cannabis Cautioning Scheme will likely remain inaccessible to a large proportion of Aboriginal people caught in possession of cannabis in NSW.

ACKNOWLEDGEMENTS

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APPENDIX

Appendix A: Regression results

Table A1 reports regression results for the eligible for three subsamples – Aboriginal offenders, non-Aboriginal offenders, and all offenders. All models include PAC and month-year fixed effects. We report F statistics for two F-tests; one which tests the null hypothesis that all the coefficients in the model equal zero, and another that tests the null hypothesis that all the coefficients for PAC and month-year fixed effects are zero. Covariates with parameters equal to zero were omitted due to collinearity. Generally, parameters are similar between Aboriginal and non-Aboriginal specific regressions. The pooled regression indicates that holding all else constant, an Aboriginal offender is 4 p.p. less likely to receive a cannabis caution than a non-Aboriginal offender. This disparity can be attributed to unobservable variables and/or discrimination and aligns with the KOB decomposition results we present in Figure 6.

Table A1. Regression results for eligible subsample

	Aboriginal	Non-Aboriginal	Pooled
Constant	0.75***	0.95***	0.95***
	(0.22)	(0.02)	(0.02)
Aboriginality			-0.04***
			(0.01)
Age (relative to 18-24)			
25-34	-0.09***	-0.01	-0.02**
	(-0.03)	(-0.01)	(-0.01)
35-44	-0.09***	-0.06***	-0.07***
	(-0.04)	(-0.01)	(-0.01)
45-54	-0.18***	-0.13***	-0.14***
	(-0.04)	(-0.02)	(-0.01)
55+	-0.16***	-0.14***	-0.14***
	(-0.05)	(-0.02)	(-0.02)
Gender (relative to female)			
Male	-0.01	0.01	0.01
	(-0.03)	(-0.01)	(-0.01)
SEIFA Quartile (relative to most disadvantaged)			
More disadvantaged	-0.06*	0.00	0.00
	(-0.03)	(-0.01)	(-0.01)
Less disadvantaged	-0.03	0.01	0.01
	(-0.04)	(-0.01)	(-0.01)
Least disadvantaged	0.06	0.02**	0.02**
	(-0.06)	(-0.01)	(-0.01)
Missing	0.02	0.12***	0.12***
	(-0.06)	(-0.03)	(-0.02)
Remoteness Area (relative to major cities)			
Inner regional	0.04	-0.01	-0.01
	(-0.04)	(-0.01)	(-0.01)
Outer regional	0.04	0.01	0.01
	(-0.05)	(-0.03)	(-0.02)
Remote/very remote	-0.02	-0.06	-0.05
	(-0.08)	(-0.09)	(-0.06)
Missing remoteness	0a	-0.17***	-0.13***
	(.)	(-0.03)	(-0.03)

Table A1. Regression results for eligible subsample

	Aboriginal	Non-Aboriginal	Pooled
Prior finalised court appearances with proven offence(s) (relative to 0)			
1	-0.15***	-0.22***	-0.22***
	(-0.04)	(-0.01)	(-0.01)
2	-0.15***	-0.33***	-0.31***
	(-0.04)	(-0.02)	(-0.02)
>=3	-0.32***	-0.46***	-0.45***
	(-0.04)	(-0.02)	(-0.02)
Finalised prison sentence	-0.08***	-0.11***	-0.09***
	(-0.03)	(-0.02)	(-0.02)
Prior proven offence against justice procedures	-0.09**	-0.09***	-0.09***
	(-0.04)	(-0.03)	(-0.02)
Prior proven theft offence	-0.09***	-0.06***	-0.06***
	(-0.03)	(-0.02)	(-0.02)
Prior proven weapons offence	-0.07**	-0.16***	-0.14***
	(-0.03)	(-0.02)	(-0.02)
Prior proven public order offence	0.02	-0.05**	-0.02
	(-0.03)	(-0.02)	(-0.02)
Prior proven breach of community order offence	0.00	-0.02	-0.01
	(-0.04)	(-0.03)	(-0.02)
Prior proven property damage offence (ANZSOC 12) in last 5 years	-0.02	0.03	0.00
	(-0.03)	(-0.02)	(-0.02)
Prior dangerous or negligent act endangering persons offence	0.06	-0.08***	-0.05**
	(-0.05)	(-0.03)	(-0.02)
Prior proven traffic offence	-0.04	0.04***	0.03**
	(-0.03)	(-0.02)	(-0.01)
Prior proven driving while disqualified or suspended offence	0.08**	0.05***	0.05***
	(-0.04)	(-0.02)	(-0.02)
F-statistic	10.2	120.5	123.6
Partial F-statistic for FEs	2.83	7.33	8.5
R-squared	0.26	0.29	0.32
Observations	1753	16604	18357

Standard errors in parentheses. Estimates and standard errors are rounded to 2 decimal places
[a] omitted due to collinearity * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix B: Kitagawa-Oaxaca-Blinder decomposition results and robustness tests

Table B1 displays KOB decomposition results across two datasets. The first is the January 2017 to February 2020 data used in this report, and the second is a dataset with observations from the 14th of January to the 30th of June 2022, to test whether our results are robust to the change in police practice which requires officers to ask all offenders and victims if they are Aboriginal and Torres Strait Islander. We also report decomposition results across two different measures of Aboriginality; Aboriginality ever recorded and Aboriginality at current contact. The former is likely an overestimate of Aboriginality while the latter is likely an underestimate. The data corresponding to Figure 6 is reported in Column 1.

Table B1. Kitagawa-Oaxaca-Blinder results for eligible subsample

	2017-2020		2022	
	(1)	(2)	(3)	(4)
	Aboriginality ever recorded	Aboriginality at current contact	Aboriginality ever recorded	Aboriginality at current contact
Overall				
Non-Aboriginal caution rate	0.74***	0.73***	0.75***	0.75***
	(0.00)	(0.00)	(0.01)	(0.01)
Aboriginal caution rate	0.40***	0.35***	0.41***	0.41***
	(0.01)	(0.02)	(0.04)	(0.04)
Difference	0.34***	0.38***	0.34***	0.34***
	(0.01)	(0.02)	(0.04)	(0.04)
Explained	0.31***	0.32***	0.28***	0.29***
	(0.01)	(0.01)	(0.03)	(0.03)
Unexplained	0.03**	0.06***	0.06	0.05
	(0.01)	(0.02)	(0.04)	(0.04)
Explained				
Demographics	0.02***	0.03***	0.03	0.04**
	(0.01)	(0.01)	(0.02)	(0.02)
Prior court appearances with proven offence(s)	0.19***	0.18***	0.13***	0.13***
	(0.01)	(0.01)	(0.02)	(0.02)
Prior prison	0.02***	0.01***	0.05***	0.04***
	(0.00)	(0.00)	(0.02)	(0.01)
Prior type	0.04***	0.04***	0.03	0.03
	(0.01)	(0.01)	(0.02)	(0.02)
Month-year fixed effects	(0.00)	0.00	0.01**	0.01**
	(0.00)	(0.00)	(0.01)	(0.01)
PAC fixed effects	0.05***	0.06***	0.03	0.03
	(0.01)	(0.01)	(0.02)	(0.02)
Unexplained				
Demographics	0.12*	0.20**	0.21	0.21
	(0.07)	(0.09)	(0.39)	(0.39)
Prior court appearances with proven offence(s)	0.08**	0.06	0.25**	0.24**
	(0.04)	(0.05)	(0.10)	(0.10)
Prior Prison	(0.01)	0.01	(0.00)	0.00
	(0.01)	(0.01)	(0.03)	(0.03)
Prior type	0.00	(0.02)	(0.01)	(0.00)
	(0.01)	(0.02)	(0.04)	(0.04)
Month-year fixed effects	0.02	(0.00)	(0.20)*	(0.20)*
	(0.04)	(0.07)	(0.11)	(0.11)
PAC fixed effects	0.44***	(0.41)***	(0.38)**	(0.38)**
	(0.07)	(0.16)	(0.18)	(0.18)
Constant	(0.63)***	0.22	0.19	0.19
	(0.12)	(0.20)	(0.42)	(0.42)
N	18,357	16,653	1,567	1,567

Standard errors in parentheses
* *p* < 0.10, ** *p* < 0.05, *** *p* < 0.01

Table B2 shows KOB results using alternative models and reference groups, using the same dataset as our analysis presented in Figure 6. Column 1 displays results from a pooled KOB decomposition, which uses reference coefficients from a pooled model combining Aboriginal and non-Aboriginal groups using the method proposed by Oaxaca and Ransom (1994). Column 2 shows results from a KOB regression which uses Yun's (2005) method to normalise categorial variables such that the detailed decomposition results do not depend on the choice of base categorical variables. Column 3 shows output from a KOB regression using a non-linear logistic regression model. Column 4 presents output from the same model as presented in Figure 6 excluding PAC fixed effects.

Table B2. Kitagawa-Oaxaca-Blinder results for eligible subsample, 2017-2020 dataset, robustness tests

	Pooled KOB (1)	Normalised KOB (2)	Logit KOB (3)	No PAC FEs KOB (4)
Overall				
Non-Aboriginal caution rate	0.74***	0.74***	0.74***	0.74***
	(0.00)	(0.00)	(0.00)	(0.00)
Aboriginal caution rate	0.40***	0.40***	0.39***	0.39***
	(0.01)	(0.01)	(0.01)	(0.01)
Difference	0.34***	0.34***	0.34***	0.35***
	(0.01)	(0.01)	(0.01)	(0.01)
Explained	0.31***	0.31***	0.32***	0.30***
	(0.01)	(0.01)	(0.01)	(0.01)
Unexplained	0.03***	0.03**	0.03**	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Explained				
Demographics	0.02***	0.02***	0.02***	0.05***
	(0.01)	(0.01)	(0.01)	(0.00)
Prior court appearances with proven offence(s)	0.19***	0.19***	0.17***	0.20***
	(0.01)	(0.01)	(0.01)	(0.01)
Prior prison	0.01***	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Prior type	0.04***	0.04***	0.05***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Month-year fixed effects	(0.00)	(0.00)	(0.00)	(0.00)
	(0.00)	(0.00)	(0.00)	(0.00)
PAC fixed effects	0.05***	0.05***	0.06***	-
	(0.01)	(0.01)	(0.01)	-
Unexplained				
Demographics	0.12*	0.01	0.11	0.02
	(0.07)	(0.03)	(0.14)	(0.11)
Prior court appearances with proven offence(s)	0.08**	0	0.09***	0.22***
	(0.03)	(0.01)	(0.03)	(0.03)
Prior prison	(0.00)	(0.01)	(0.00)	(0.01)
	(0.00)	(0.01)	(0.01)	(0.01)
Prior type	0.01	0.00	0.00	(0.00)
	(0.01)	(0.01)	(0.02)	(0.01)
Month-year fixed effects	0.02	(0.01)	0.02	(0.01)
	(0.04)	(0.01)	(0.05)	(0.07)
PAC fixed effects	0.44***	(0.01)	0.09	-
	(0.07)	(0.02)	(0.27)	-
Constant	(0.63)***	0.05	(0.28)	(0.18)
	(0.12)	(0.04)	(0.28)	(0.14)
N	18,357	18,357	18,351	18,395

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$