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Searching for cannabis

Are grounds for search associated with outcomes?

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Executive summary

The research explored whether there was an association between the grounds for a stop and search for cannabis and criminal justice (CJ) outcomes. The smell of cannabis was not associated with outcomes, though some behavioural factors were. CJ outcomes were almost 10 percentage points higher when the grounds for search included at least one behavioural factor directly or indirectly related to drugs. These factors should, therefore, have a more prominent role than the smell of cannabis in officer decision making.

Introduction

This exploratory research was carried out to develop the evidence base underpinning national guidance on whether the smell of cannabis, on its own, provides sufficient grounds to carry out a drug search. The analysis used stop and search data from two forces in England. Its primary aim was to examine whether different grounds for a cannabis search – and in particular the smell of cannabis – made a difference to CJ outcomes (ie, arrest, caution, summons, fixed penalty notice, cannabis/khat warning or community resolution). It also sought to find out how often drug searches based on drug-dog indications resulted in a CJ outcome compared to other grounds for search.

Findings

- Analysis of a random sample of 2,000 cannabis searches showed that smelling cannabis made no difference to outcomes. Searches with the smell of cannabis recorded in their grounds were no more or less likely to result in a CJ outcome than those without the smell of cannabis recorded in their grounds.
- Several factors were identified in officers' grounds that significantly increased the likelihood of a cannabis search resulting in a CJ outcome. The factors that had the largest positive influence tended to refer to behaviour that was directly or indirectly related to drugs (eg, being seen to hide or swallow an object or being intoxicated).
- Conversely, several factors were identified that reduced the likelihood of a cannabis search resulting in a CJ outcome. These factors tended to be non-behavioural, contextual and more circumstantial in nature (eg, being under 18 years old or being seen in a group, 'late at night' or in a secluded place).
- To make the above findings more accessible, the proportion of CJ outcomes resulting from cannabis searches based on different grounds was calculated:
 - There was no significant difference between searches based on the smell of cannabis alone, smell accompanied by other factors or only other factors.
 - CJ outcomes were almost 10 percentage points higher for searches that referred in their grounds to behaviour that was directly or indirectly related to drugs (or included a similar factor) compared to searches that did not.
- Analysis of 7,380 drug searches showed that CJ outcomes were markedly lower for searches based on drug-dog indications than for those based on other grounds.

Conclusion

Overall, the research suggested that a focus on suspect behaviour is much more important than the smell of cannabis in officers' grounds for search and is likely to lead to more productive searches in CJ terms. A focus on these behavioural factors should make it easier for officers to justify their actions and is consistent with PACE Code A (Home Office 2014).

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1. Introduction

Background

In 2016, the College of Policing (the College) published authorised professional practice (APP) on stop and search. This guidance included discussion as to whether the smell of cannabis on its own provided sufficient grounds for an officer to carry out a search under section 23 of the Misuse of Drugs Act 1971. It said there was no case law to clarify the legal position but emphasised that reasonable grounds had to relate to the likelihood of an officer finding the suspected object. The APP therefore stated that ‘the smell of what the officer believes to be cannabis on its own will not normally justify... the search of a person who smells of cannabis...’ (College of Policing 2016).

The guidance did not, however, rule out the possibility that smell alone could ever form the lawful basis of a search or suggest that reasonable grounds could not combine smell and other factors. The APP recommended that officers should consider the circumstances as a whole before carrying out a search if they believed they could smell cannabis. This approach was also advocated with indications of drug possession made by passive drugs-dogs when their use was not based on specific intelligence, but part of a high-profile crime operation.

In partial support of this position, the APP made reference to analysis carried out by or for some forces that reportedly showed that searches based on the smell of cannabis tended to have a lower arrest rate than those based on other grounds (eg, Hine 2015). This analysis, however, was not able to distinguish between grounds solely based on the smell of cannabis and those based on smell combined with other factors. It also did not report the rate of other outcomes of the search, which might have provided a more comparable measure of success or productivity, given that a proportion of cannabis searches will result in a cannabis warning or other sanction rather than an arrest.

Aims and method

To investigate these issues further, the College carried out exploratory analysis using data on recorded searches from two police forces in England for the period March to August 2015. The primary aim of this research was to examine whether different grounds for a cannabis search – and in particular the smell of cannabis – made a difference to criminal justice (CJ) outcomes (ie, an arrest, caution, summons, fixed penalty notice, cannabis/khat warning or community resolution).¹ A secondary aim was to find out whether the proportion of drug searches based on drug-dog indications that had resulted in a CJ outcome was significantly different from the proportion of drug searches based on other grounds.

The databases for the two forces contained 10,802 stop and search records, of which 7,380 were for drugs (68 per cent of the total). Key-word searches of the free-text ‘grounds’ field of databases identified that there were 3,945 likely searches for cannabis (54 per cent of all drug searches) and 348 likely searches based on drug-dog indications (5 per cent of all drug searches). A sample of 2,000 cannabis search records was drawn at random from the two forces (ie, 1,000 per force). The factors included in the grounds for these search records were systematically coded. Multivariate statistical analysis was then carried out to identify whether any factors were positively or negatively associated with a cannabis search resulting in a CJ outcome (taking into account the influence of all other factors). The methods are described in more detail in the appendix.

¹ Recording differences between forces meant it was not possible to look at whether outcomes were directly related to drugs or whether officers had found what they suspected (eg, cannabis).

2. Findings

Cannabis searches based on the smell of cannabis and other grounds

Table 1 summarises the results of the multivariate analysis based on the sample of 2,000 cannabis search records drawn at random from the two forces. They show that some factors were positively or negatively associated with a cannabis search resulting in a CJ outcome, however, smelling cannabis made no difference to outcomes. Searches with the smell of cannabis recorded in their grounds were no more or less likely to result in a CJ outcome than those without the smell of cannabis recorded in their grounds.

Table 1. The factors associated with a cannabis search resulting in a CJ outcome

Category	Factor	Effect on likelihood of a CJ outcome
Socio-demographics	Being searched in force B	↑
	Being young (0-17 years)	↓
	Self-defined ethnicity	–
	Sex	–
Context	Seen in or near a vehicle	↑
	Seen in a secluded public space	↓
	Seen 'late at night'	↓
	Seen with an associate or group	↓
	Seen in a hotspot/location for drugs	–
Information or intelligence	Matched physical description	↓
	Smell of cannabis	–
	Information from a third party	–
	Was known to the police	–
General or ambiguous behaviour	Seen to hide, swallow, discard or store object	↑
	Seen or found to be intoxicated	↑
	Attempted to avoid police contact	↓
	Seen to commit a traffic offence/involved in an RTC	–
Drug-specific behaviour	Seen smoking, near or in possession of a suspected joint	↑
	Seen near or in possession of suspected drugs	↑
	Seen near or in possession of drugs paraphernalia	↓
	Seen near or in possession of suspected drug traces/residue	–
	Suspected drug dealing	–
Admission	Admitted current/recent drug use, possession or contact	↑
	Admitted possession of drugs paraphernalia	–
Demeanour during police contact	Nervous	–
	Evasive	–

Non-significant factors based on a small number of cases (<40) have not been reported. The full statistical model is presented in table A2 in the appendix.

Several factors were identified in officers' grounds that significantly increased the chances of a cannabis search resulting in a CJ outcome (relative to those factors not being in the grounds). The factors that had the largest positive influence on outcomes tended to refer to behaviour that was directly or indirectly related to the use of drugs, namely:

- smoking, holding or being close to a suspected joint
- being seen in possession or close to suspected drugs (eg, a deal bag)
- admitting to being in possession of drugs or recently using or being in contact with drugs
- being seen to hide, swallow or discard something
- being seen or found to be intoxicated.

Searching for cannabis

Two non-behavioural factors also increased the chances of a CJ outcome, namely:

- being seen in or near a vehicle
- being searched in one force in particular.

Conversely, several factors were identified that lowered the chances of a cannabis search resulting in a CJ outcome (relative to them not being recorded). These factors tended to be non-behavioural, contextual and more circumstantial in nature, namely:

- being under 18 years old
- being seen in a group or with an associate
- being seen 'late at night'
- being in a secluded place (eg, in an empty car park)
- matching a physical description of a suspect or being identified during a geographic search of a local area
- attempting to avoid police contact (eg, running off)
- being seen in possession or close to drugs paraphernalia (eg, grinder, bong).

The presence or absence of other factors in officers' grounds were not associated with the outcome of the search. These factors included, for example, the smell of cannabis, drug-dog indications, the ethnicity of the person who was searched and the person's demeanour.

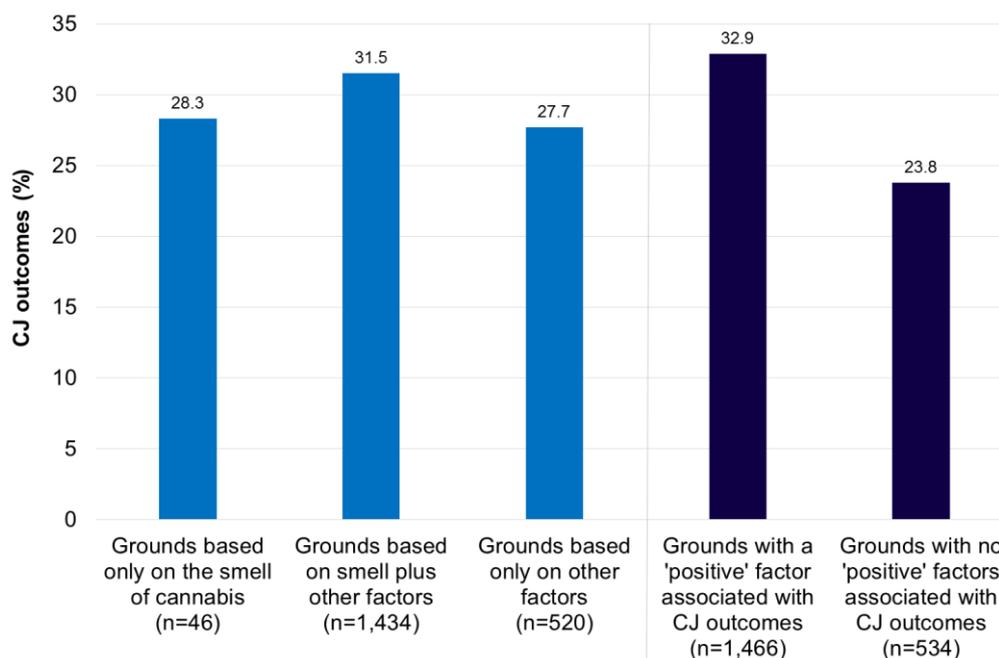
To make the above findings more accessible, the proportion of CJ outcomes resulting from cannabis searches based on different grounds was calculated (see figure 1). The aim was to see whether some were more productive than others. The results were consistent with the multivariate analysis:

- **Smell of cannabis** – The smell of cannabis made no significant difference to the proportion of cannabis searches resulting in a CJ outcome. Around a third of searches led to a CJ outcome, irrespective of whether they were based on the smell of cannabis alone, the smell of cannabis accompanied by other factors, or factors other than the smell of cannabis.²
- **Factors positively associated with CJ outcomes** – There was a significant and marked effect on outcomes when officers included at least one factor in their grounds that increased the likelihood of CJ outcome.³ The CJ outcome rate was almost 10 percentage points higher for searches based on at least one 'positive' factor compared to those that were not (33 per cent compared to 24 per cent). Separate regression analysis showed the number of factors recorded in the grounds was not associated with CJ outcomes, suggesting quantity without quality made little difference.

² The other grounds that accompanied the smell of cannabis in officers' grounds were sometimes fairly circumstantial (eg, being in a group) and did not amount to much more in evidential terms than the smell of cannabis alone. It was not possible to present the results according to circumstantial and more substantial factors because multiple codes had been applied to most search records.

³ This result is likely to be an upper estimate as the approach that was used risks magnifying the effect of chance correlations in the data.

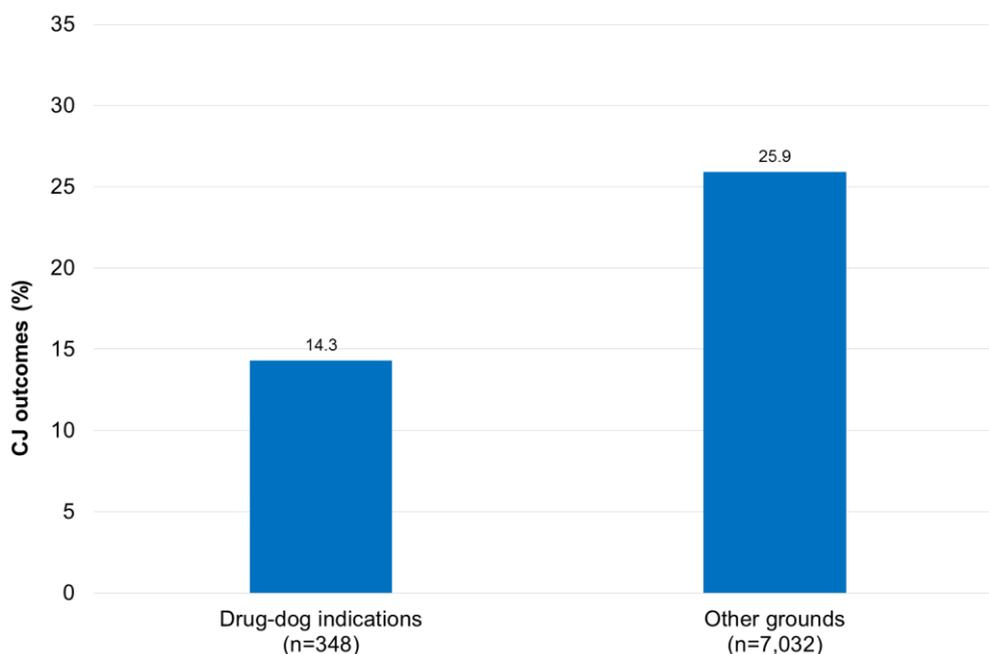
Figure 1. CJ outcome rates for cannabis searches based on different grounds



Drugs searches based on drug-dog indications

Figure 2 presents the CJ outcome rates for all drug searches recorded in the two forces (7,380 in total). The results show that CJ outcomes were almost 12 percentage points lower for searches based on drug-dog indications than for searches based on other grounds (14 per cent and 26 per cent respectively).

Figure 2. CJ outcome rates for drug searches based on drug-dog indications and other grounds



The CJ outcome rates for searches under section 1 of PACE and section 47 of the Firearms Act 1968 were 24 per cent and 22 per cent respectively.

3. Discussion and conclusions

Discussion

There was no evidence to suggest that officers who recorded in their grounds that they smelt cannabis were more likely to secure a CJ outcome than those that did not. The smell of cannabis – like some other factors – had no effect on the likelihood of a cannabis search leading to a CJ outcome such as an arrest, summons or caution.

A relatively small number of factors were identified, however, that did increase these odds. As expected, and consistent with the Code A (Home Office 2014) and APP (College 2016), the factors that were found to increase the chances of a search having a CJ outcome tended to relate to behaviour that was directly linked to drugs (eg, observed or admitted possession). Cannabis searches containing at least one of these ‘positive’ factors in their grounds also had a significantly and much higher CJ outcome rate than those that did not. These more behavioural factors should, therefore, play a more prominent role in officer decision making. They should not only act as stronger signals to officers considering a search, but should also make it easier for officers justify their actions because finding drugs would seem like a stronger possibility and more reasonable. While the findings in this report may not be strong enough to support the position that the smell of cannabis on its own can never constitute reasonable grounds (regardless of any legal considerations), they would certainly indicate that a focus on suspect behaviour is much more important than the smell of cannabis and will likely lead to more productive searches in CJ terms.

It was less clear why the non-behavioural factors increased the likelihood of a CJ outcome. It is conceivable that a person searched for cannabis who was seen in or near a vehicle was more likely to receive a CJ outcome because of concerns about driver intoxication, public safety and/or the ability of officers to issue fixed penalty notices to deal with traffic matters. The force in which the search was carried out also had an effect. Searches for cannabis in one force were more likely than those in the other force to result in a CJ outcome. The reason for this difference is unknown, but could relate to local practices (eg, tasking, crime priorities, training and performance management).

Factors were also identified that significantly decreased the chance of a cannabis search resulting in a CJ outcome. These factors – which included avoiding police contact, or being seen ‘late at night’ or in a secluded place – were notable as previous research (Quinton 2011) has shown them to be part of the police common-sense, often prompting officers to be generally suspicious. Objectively speaking, however, they were not in themselves particularly strong signals that a person was likely to have cannabis on them because they tended to refer to the context of the encounter rather than what the suspect was doing (unlike the ‘positive’ factors more directly related to drug behaviour).

It was notable that people under 18 years old and those who were with other people were significantly less likely to receive a CJ outcome than those who were older (ie, aged 35 and over) or on their own. There are a range of possible explanations for these results. With age, it is possible that officers were using their discretion to not criminalise young people who were in possession of small quantities of cannabis for personal use, or were simply searching young people who were in fact not in possession of cannabis. With groups, it may be that being with other people heightens officers’ suspicions. Equally, it is likely to have been much harder for officers to identify the culprit in a group without other specific information, plus there may have been concerns that drugs had been passed between group members.

The secondary aim of the research was to look at the relationship between drug-dog

indications and CJ outcomes from stop and search. In purely numerical terms, it would seem that drug-dogs performed less well than police officers in identifying members of the public in possession of drugs – a finding that many will find counter-intuitive given the well-established belief in the ability of police dogs. The results presented here must be treated with a caution, however. The evidence from two forces would suggest that there is a need to look in more detail at the role and effectiveness of passive drug-dogs.

The exclusive focus in this report on the CJ outcome rate means that further consideration is required to examine how drug-dogs are deployed and the ways in which these deployments may affect behaviour. Without this more nuanced understanding, it is not possible to reach any definitive conclusions. If the drug-dogs were used mainly to initiate searches as a condition of entry to nightclubs or music festivals, their deployment could have affected the behaviour of the police officers and/or drug-users. Officers may have decided against a CJ outcome if the drug-dog indications were routinely resulting in small quantities of cannabis being found.

There is also some evidence to suggest, for example, that users may dispose of, or even swallow, their drugs on sight of a dog before being searched (Degenhardt and Dunn 2009, Hickey et al 2012). Moreover, the smell of cannabis may linger on users or bystanders for some time after it has been used or been in someone's possession, thereby leading to false-positives. In Sydney, Australia, 59 per cent of people who were searched as a result of a passive drug-dog indication but found to have nothing on them said they had recently had some contact with cannabis or been in a place where cannabis had been smoked (NSW Ombudsman 2006).

The proportion of drug searches leading to a CJ outcome raises a broader question about the relative effectiveness of drug-dogs that work passively in open areas compared to those that work more actively in confined spaces. Jezierski et al (2014) has shown, for example, that active location searches by dogs under test conditions resulted in hidden drug samples being found after an average of 64 seconds. The drug-dogs were accurate in 88 per cent of tests overall, though their accuracy varied by drug type and was much reduced when they searched outside or in cars (64 per cent and 58 per cent respectively).

Conclusion

A focus of the analysis has been to explore the influence that the smell of cannabis had on whether a cannabis search was likely to lead to a CJ outcome, relative to other factors in officers' grounds for search. Overall, the research pointed to the smell of cannabis not being critical to outcomes.

The research sought to add to the limited evidence base on the outcomes of stop and search, but was unable to present a complete picture. The findings relate to a very specific context and so it cannot be assumed that similar findings will be found elsewhere or at other times. The use of stop and search powers varies between forces and there is evidence to suggest that the likelihood of a CJ outcome is influenced by the force in which the search was carried out. Moreover, the introduction of the APP and existence of force policies on the status of the smell of cannabis can be reasonably expected to have led to some local differences.

Further work is required to develop our understanding of these issues and to explore the relationship between operational practice, the finding of the suspected object and other items and the decision to issue a CJ penalty. There is also a need to look beyond the outcome of stop and search in narrowly CJ terms and to consider how the quantity and quality of grounds could affect the productivity of other types of search, particularly those carried out to deal with more serious offences that are of greater public concern (eg, knife possession).

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Appendix

Sampling

Forces

Stop and search records from two police forces were analysed. Both had participated in earlier College research testing the impact of pilot stop and search training (Quinton and Packham 2016), which meant their data were readily-available. This earlier study compared the attitudes and practices of officers in six forces before and after they were trained relative to those of a control group. It would not have been suitable to analyse stop and search records for the three-month period after implementation because the training instructed officers that the smell of cannabis – on its own – would not normally constitute reasonable grounds for suspicion. The analysis, therefore, focused on the six-month period before the training was piloted (March to August 2015). It was only possible to analyse the data from two of the six participating forces because the four other forces had insufficiently detailed data or a policy prohibiting ‘smell only’ cannabis searches.

Stop and search records

Several steps were followed to select the stop and search records from the two forces that were suitable for analysis. All drug searches were initially identified using the ‘power’ and ‘object of search’ fields. It was necessary to recode a small number of records where the power and object did not tally (eg, PACE searches for drugs) based on the free-text ‘grounds’ field. Key-word searches of the ‘grounds’ field were carried out to identify drugs searches that were likely to have been for cannabis⁴ or to have resulted from a drug-dog indication⁵. A sub-sample of 1,000 cannabis search records was then drawn at random from each force’s database for coding. This involved generating a random number for each record, sorting the records by this number and selecting the first 1,000 cases per force.

Coding

An initial coding framework was developed drawing on previous research (eg, Miller and Alexandrou 2016) and a review of a small number of records in the stop and search databases. The initial framework was applied independently to a sample of 50 randomly selected records by the principal investigator and a researcher. They discussed their results and made changes to the coding framework, including clarifying the meaning of the codes. Two trained researchers used the revised coding framework to independently code a second sample of 50 randomly selected records. Their results were compared and Krippendorff’s alpha used to test inter-rater reliability. Further revisions to the framework and clarifications to the coding guidance were made following the exercise.

The sample of 2,000 stop and search records was distributed among the two researchers, who coded their share using the final coding framework. Whenever a record was found that related to a search where cannabis was not suspected but had been included in the sample for another reason (eg, it contained the phrase ‘cannabis found’), it was substituted at random by another record. Ten per cent of records were randomly selected for checking by the principal investigator to ensure consistent application of the coding framework and to share learning. The frequency with which the codes were applied is presented in table A1.

⁴ Search terms: cannabis, cana*, canni*, skunk, weed, hash, marijuana, marajuana, resin, dope, puff, herb*, bush, bud, grass, pot, smel*, spliff, reefer, joint, rizla, rizzla, rista, roll*, paper, roach, grinder, bong and hash pipe.

⁵ Search terms: Drug dog, drugs dog, dog I.D., dog ID, dog indication, passive dog, dog search, sniffer dog.

Table A1. The frequency of factors in recorded grounds for cannabis searches

Factor in recorded grounds	Coded records*	
	n	%
Context		
Seen in or near a vehicle	957	47.9
Seen with an associate or group	1,099	54.9
Seen 'late at night'	50	2.5
Seen in a secluded public space	408	20.4
Seen in a restricted place	28	1.4
Seen in a hotspot/location for drugs	128	6.4
Intelligence or information		
Matched physical description	62	3.1
Was known to police	150	7.5
Drug-dog indication	10	0.5
Smell of cannabis	1,480	74.0
Search was part of an operation	16	0.8
Information from a third party	403	20.2
General or ambiguous behaviour		
Seen to hide, swallow, discard or store object	93	4.7
Seen or found to be intoxicated	115	5.8
Attempted to avoid police contact	201	10.1
Seen to commit a traffic offence/involved in an RTC	188	9.4
Heard to talk about drugs	11	0.5
Drug-specific behaviour		
Seen smoking, near or in possession of a suspected joint	419	21.0
Seen near or in possession of suspected drugs	148	7.4
Seen near or in possession of suspected drug traces/residue	44	2.2
Seen near or in possession of drugs paraphernalia	292	14.6
Suspected drug dealing	115	5.8
Admission		
Admitted drug use, possession or contact	496	24.8
Admitted being a drug user/supplier	18	0.9
Admitted possession of drugs paraphernalia	49	2.5
Demeanour during police contact		
Nervous	70	3.5
Evasive	88	4.4
Uncooperative	24	1.2
Confrontational	1	0.1
Total sample		
All cannabis searches	2,000	100.0

* The list of factors has been edited slightly for presentational reasons. The number and percentage of records do not total 2,000 or 100 respectively because multiple codes could be applied to each record. Mean factors per record = 3.59 (SD 1.39), mode = 3, maximum = 9. 78% of records contained more than two factors.

The way the total sample was distributed meant that 10 per cent of records were coded independently by both researchers. This enabled inter-rater reliability to be tested using Cohen's Kappa. Only codes with a Kappa value greater than 0.6 were included in the subsequent analysis.⁶

⁶ Kappa values: 0.0 to 0.2 = slight agreement, 0.21 to 0.40 = fair agreement, 0.41 to 0.60 = moderate agreement, 0.61 to 0.80 = substantial agreement, 0.81 to 1.0 = almost perfect agreement (Landis and Koch 1977).

Analysis

Binary logistic regression was used to identify the factors recorded in the grounds for a cannabis search that significantly increased or decreased the likelihood it would result in a CJ outcome. Prior to the regression being carried out, all the coded variables and additional socio-demographic variables to be included in the model were tested for collinearity. Pearson's correlation was used to see whether any of the variables were associated with one another. Coefficients of 0.8 would have indicated highly-correlated variables that should have been excluded from the model as they potentially measured the same underlying variable. No variables were excluded as only a very small number of weak correlations were found.⁷

Table A2. Logistic regression model for cannabis searches resulting in a CJ outcome

	B	SE	Wald	p	Exp(B)
Force B (ref: force A)	.536	.119	20.338	.000	1.708
0-17 years (ref: 35+ years)	-.709	.223	10.135	.001	.492
18-24 years (ref: 35+ years)	-.221	.192	1.324	.250	.802
25-34 years (ref: 35+ years)	-.150	.223	.449	.503	.861
Non-white (ref: white)	-.041	.131	.096	.756	.960
Male (ref: female)	.151	.202	.559	.455	1.163
Seen in or near a vehicle (ref: not)	.391	.129	9.135	.003	1.478
Seen in a secluded public space (ref: not)	-.289	.146	3.953	.047	.749
Seen 'late at night' (ref: not)	-.808	.408	3.914	.048	.446
Seen with an associate or group (ref: not)	-.734	.113	42.512	.000	.480
Seen in a restricted public place (ref: not)	-.430	.589	.532	.466	.651
Seen in a hotspot/location for drugs (ref: not)	.047	.227	.042	.837	1.048
Matched physical description (ref: not)	-1.003	.453	4.906	.027	.367
Smell of cannabis (ref: not)	.169	.145	1.351	.245	1.184
Drug-dog indication (ref: not)	-.136	.712	.036	.849	.873
Search was part of an operation (ref: not)	1.048	.546	3.687	.055	2.852
Information from a third party (ref: not)	-.162	.149	1.182	.277	.850
Was known to the police (ref: not)	-.363	.224	2.639	.104	.695
Seen to hide, swallow, discard or store object (ref: not)	.737	.249	8.786	.003	2.089
Seen or found to be intoxicated (ref: not)	.518	.219	5.598	.018	1.679
Attempted to avoid police contact (ref: not)	-.458	.198	5.359	.021	.632
Seen to commit traffic offence/RTC (ref: not)	-.097	.189	.265	.607	.907
Heard to talk about drugs (ref: not)	-.225	.836	.072	.788	.799
Seen smoking, near or in poss'n of a joint (ref: not)	.335	.153	4.809	.028	1.398
Seen near or in poss'n of drugs (ref: not)	.613	.216	8.080	.004	1.845
Seen near or in poss'n of drugs paraphernalia (ref: not)	-.468	.171	7.443	.006	.626
Seen near or in poss'n of drug traces/residue (ref: not)	-.068	.400	.029	.866	.935
Suspected drug dealing (ref: not)	.048	.240	.040	.841	1.050
Admitted drug use, possession or contact (ref: not)	.315	.126	6.247	.012	1.370
Admitted being a drug user/supplier (ref: not)	-1.382	.774	3.189	.074	.251
Admitted possession of drugs paraphernalia (ref: not)	-.239	.387	.383	.536	.787
Nervous	.064	.295	.047	.828	1.066
Evasive	-.046	.276	.028	.868	.955
Uncooperative	-.823	.654	1.585	.208	.439
Confrontational	-19.583	40192.97	.000	1.000	.000
Constant	-.812	.318	6.497	.011	.444

1,878 cases were included in the model.

⁷ As a further test, a linear regression model was estimated in order to check the collinearity diagnostics. None of the variables had a tolerance of less than 0.2 or variance inflation factor of above 5.

The logistic regression model was then developed. All the coded and socio-demographic variables were included in the model in one block for theoretical reasons. The results of the model are presented in table A2. As a check of this model, further models were developed using the forward and backward (likelihood ratio) stepwise selection methods and a series of pairwise correlations estimated; the results were almost identical.

Limitations

The study has the following limitations:

- While both forces included in the analysis may be regarded as fairly typical, it is not known whether similar results would be found if the analysis was repeated using data from other forces or covering different time periods. The results cannot be said to be representative of the police service as a whole.
- The method of identifying searches as being a result of a drug-dog indication or for cannabis was not likely to be exact. The use of search-terms will inevitably have resulted in false positives and false negatives being selected (eg, non-cannabis searches included in error and cannabis searches not included in error). For example, 'cani*' would have picked up any word beginning with those letters. Similarly, 'smel*' would have detected records containing 'smell' or 'smelt' but would not have distinguished the smell of cannabis or from that of other drugs (eg, MCAT). Another issue was that officers sometimes described that they had found cannabis during the search in their grounds, meaning these searches would have been included in the sample irrespective of whether cannabis had been suspected.
- The analysis refers only to the accounts provided by officers in their written grounds – as they were originally written or inputted by data entry clerks – rather than the factors that informed their decision making but were otherwise not documented. Officers were very likely to differ in their recording practices.
- There were a number of challenges with coding the stop and search records, including the following. For example:
 - it was not possible to dissociate factors related to the person searched from other members of a group
 - the grounds were usually written in the passive voice meaning it was difficult to understand the provenance of some of the factors in the grounds
 - the detail in the grounds was often lacking and their meaning open to interpretation.