

## Project 3: How Ethnically Biased are Stop and Frisk Procedures in the UK?

### Access

Link to visualization: [UK Government Police Force Statistics: Stop and Frisk by Ethnicity \(click\)](#)  
Data ultimately provided by Home Office (2024), but found via Makeover Monday (n.d.)

Link to source Data: Data is linked by visualizations in [above](#) hyperlink.

Link to Improved Visualization: [Click Here](#). In case of problems please contact: [vayloyanalec49@gmail.com](mailto:vayloyanalec49@gmail.com). Please note the edited visualizations you see here may not be the exact same as in the final version linked.

### Story / Questions

Police Departments in the West have come under increasing scrutiny in the last couple of years for their oftentimes biased conduct against minorities. To investigate the prevalence of racial profiling in the UK, the Home Office released data on one aspect of police activity: **Stop and Frisk** – the practice of checking for contraband, potentially without a warrant / reasonable suspicion. This is highly controversial in countries where citizens are constitutionally protected from ungrounded searches of their person or property.

From reading the original visualization, it is likely that the following questions are attempted to be answered by the visualizations. Please see Appendix 1 for a breakdown of which visualizations are referenced.

**Visualization / Question 1:** How do Stop and Frisk rates differ between specific ethnicities and the national average?

**Visualization / Question 2:** What is the trend in Stop and Frisk rates between different ethnicities for the period 2020-23?

**Visualization / Question 3:** How does the London Metropolitan Police compare the National average in terms of Stop and Frisk rates between different ethnicities?

**Visualization / Question 4:** How does the ethnic breakdown of Stop and Frisks differ between searches justified under Section 1 vs Section 60 of the law? (see Page 7 for a breakdown of the different sections)

My own dashboard will attempt to answer these same questions but do so in an improved way. The improvements will be discussed in the section below. However, the overarching guiding question of the Dashboard will be: **“What are the trends in Racial Profiling by UK Police in Relation to Stop and Frisk?”**

## Limitations in Current Version

There are several limitations that can occur during the data science pipeline under investigation here.

### Collection

In terms of the data **collection**, the variable ethnicity is challenging to record in an unbiased manner for several different reasons:

- Due to globalization, being of mixed ethnicity is increasingly common
- Ethnicity is socially constructed and context dependent.
- Particularly since the Murder of George Floyd in 2020, Police globally have been under pressure to address racial issues. This could give police officers an incentive to misreport the ethnicities of the minorities they encounter.

All these factors combined mean that the ethnicity variable is likely not as accurate as we might hope.

### Processing

In terms of **processing**, the GDPR (applicable even after Brexit), it is likely that some people may have exercised their rights in relation to data: right to be forgotten and right to restriction of processing. This could further impact the quantity of the data and bring a bias, as some ethnic groups may be more likely to exercise their data rights.

### Insights

The **Insight** presented by the source has several issues that I will address in a new version of the visualization. I will go through these issues here in relation to the theories discussed in the course. For each heading, the issue is first discussed and then my new visualization is shown and (where necessary) explained in further detail why what I produced is better.

## Little Storytelling

### Stop and search

Published 3 July 2024

#### Contents

1. Main facts and figures
2. Things you need to know
3. By ethnicity
4. By ethnicity over time
5. By ethnicity and area
6. By ethnicity and legislation
7. Data sources
8. Download the data

## 1. Main facts and figures

- in the year ending 31 March 2023, there were 529,474 stop and searches in England and Wales (not including vehicle searches)
- there were 8.9 stop and searches for every 1,000 people – down from 24.8 per 1,000 people in the year ending March 2010
- there were 24.5 stop and searches for every 1,000 black people, and 5.9 for every 1,000 white people
- around 33% of all stop and searches were in the Metropolitan Police force area in London

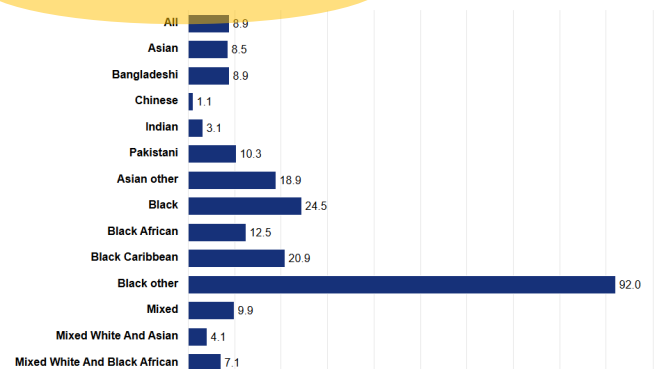
## 3. By ethnicity

Location: England and Wales

Time period: April 2022 to March 2023

Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

### Stop and search rate for every 1,000 people, by ethnicity



A visualization or blogpost, where it is feasible, should provide the most important information immediately. Here for example, the highlighted titles, while informative on the scope and purpose of the visualizations, do not describe what the data is saying, or any key points. For the title, something like: “Racial Differences in Stop and Search Persist, but Differences Between Ethnicities are Reducing”. This maintains the detail of the previous title while providing context on the data.

To give credit where it is due, the authors do use the “Main facts and figures” heading to give key information early. However, they make the mistake of putting statistics over stories. Few people will be interested in the exact numbers, but more in what those numbers mean. For example, instead of saying “there were 24.5 stop and searches for every 1000 black people, and 5.9 for every 1000 white people”, the authors could simply say “black people are searched at rates 4 times higher than white people. Those who are interested in the exact number can read the rest of the report, but most will not be

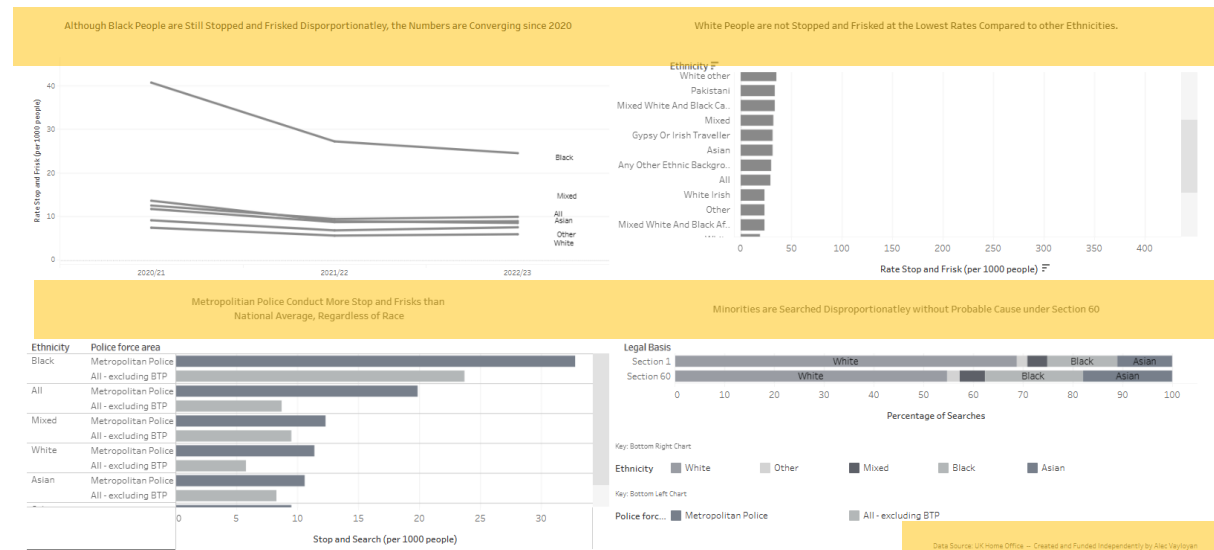
## Improved

In the improved design the story of the data is conveyed to the user in the dashboard and graph titles. This allows the overarching message of the data to be absorbed in a 2-5 second scan, rather than needing to go into the detail of the data. It is worth noting that this requires trust in the author on the audience’s part. To improve this trust, in the author section of the dashboard, it is mentioned that this dashboard was produced without police funding. These changes are highlighted in the visualization below. Please note also the KPI showing the normalized ratio of black to white people stopped and frisked.

# Ethnic Disparity in UK Police Stop and Frisk Have Improved - Strong Differences Remain

Stop and Frisk is the controversial power of law enforcement to search individuals in public potentially without any articulable suspicion. It is argued by many to allow profiling based on race.

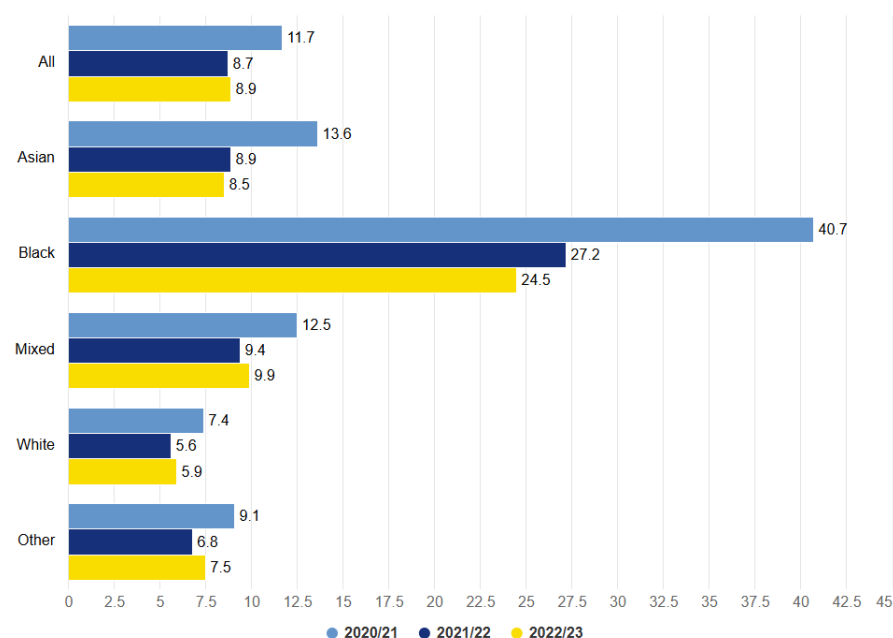
Total Frisks (Select Year): 697,210 Ratio Frisk (All Ethnicities / White, Select Year): 1.581 Year: 2020/21



By putting the stories above each visualization, each of the 4 questions presented in the introduction is answered quicker, even without changing anything about the data visualizations itself.

## Inappropriate Chart Choice

Stop and search rate for every 1,000 people, by ethnicity over time (April 2020 to March 2023)



This chart makes it difficult to digest the information at glance. There are 4 key **improvements** that will be made. Firstly, the **axis** needs to be rearranged. The x-axis should be the time (left to right is a more natural progression than down-up for time), the y axis should be the search rate and the ethnicities should be a categorical difference (either with colors or labels). I suspect the reason the layout was chosen like this is to avoid having to assign colors to ethnicities, which

can become offensive if the chart maker is not careful. However, this shift in axis will allow an easy comparison between the ethnicities over time. Right now, this is more difficult as the user needs to first find the ethnicities and then compare the correct numbers, whereas in a line chart the correct numbers are obvious (stacked on top of each other).

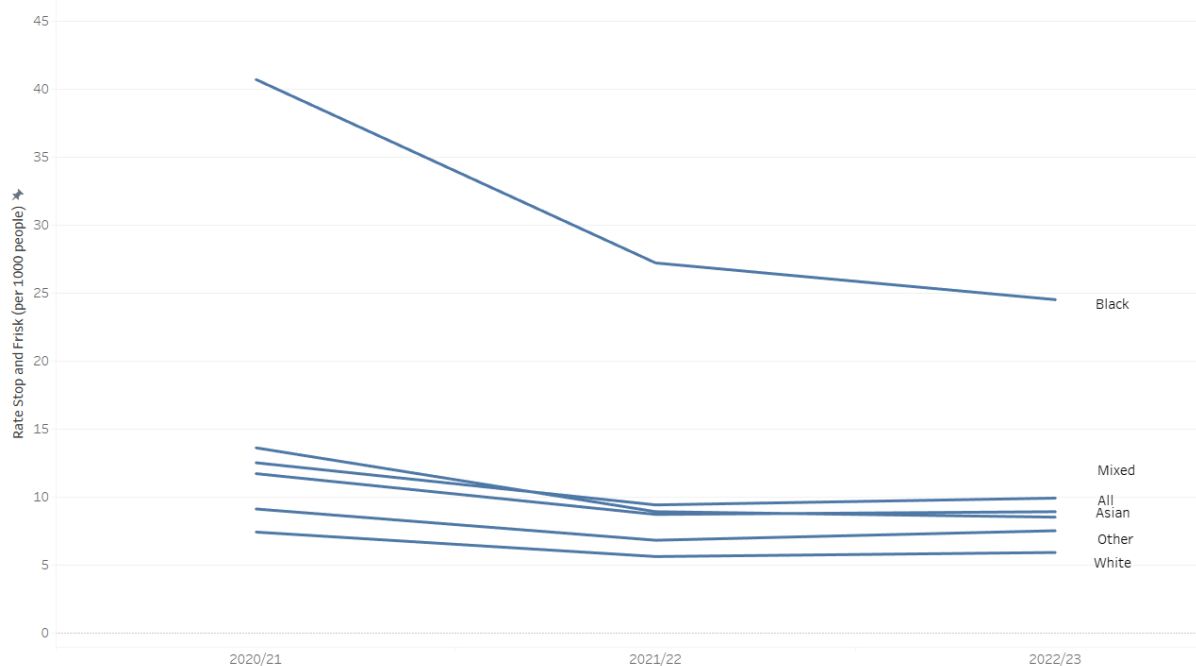
The **use of color** could be improved here as well. The use of yellow is inappropriate as it draws disproportionate attention to the 22/23 value. While it could be argued that the most recent value is the most important, there is another chart in the page describing the most recent data in more detail, so the focus here should be on the trend. The remaining color choices are fine: discrete, consistent, and non-political.

The **ordering** of the ethnicities is done alphabetically. This limits scan-ability. The chart maker either should have ordered them according to the value of the last available year or at the very least group exclusive (Asian, Black, White) and non-exclusive (All, Mixed, Other) together. There is nothing relevant about the alphabetical position of the ethnicity name that needs to be communicated to the user, in the improved version the ordering is done automatically by the ordering of the lines above each other (numerically depending on the value).

There is **redundancy** in the description of the data. Once, the bar's size is used to communicate the search rate, but a label tip is also used to communicate the same information. This redundancy is visually unpleasant and could be technically solved with a hoverable tooltip if the author really wants to include this functionality. Like this, there would be little cluttering.

## Improvements

Although Black People are Still Stopped and Frisked Disproportionately, the Numbers are Converging since 2020



The issues discussed above are fixed in this chart, to avoid repetition they will not be reiterated again. It should be noted that it is difficult to determine a trend with only three years available. This chart improves the answering of question 1 described in the introduction.

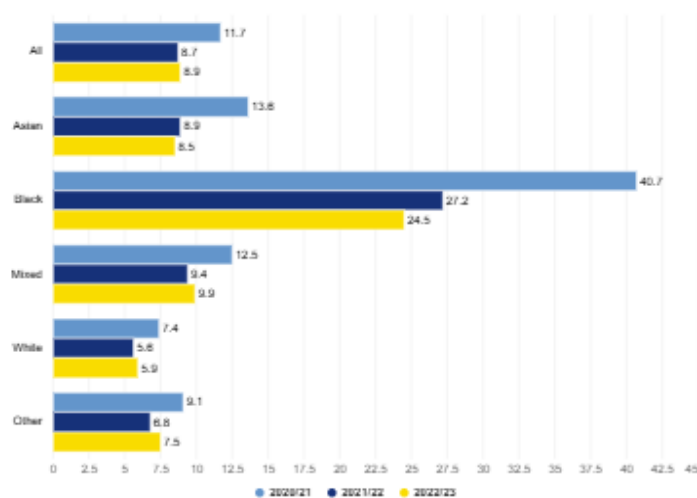
### Putting Source Data on Display

After each visualization, the source data is put on display. While this might improve transparency, which is important for a modern police force, it is an eyesore for the audience. It adds nothing that could not be gained from a download button or already found in the visualization. In fact, there is already a download option for the csv, so it is unclear what purpose the

## 4. By ethnicity over time

Location: England and Wales  
 Time period: April 2020 to March 2023  
 Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Stop and search rate for every 1,000 people, by ethnicity over time (April 2020 to March 2023)



[Download chart \(PNG\)](#)

Ethnicity	2020/21		2021/22		2022/23	
	Rate of stop and search	Number of stop and searches	Rate of stop and search	Number of stop and searches	Rate of stop and search	Number of stop and searches
All	11.7	697,210	8.7	516,259	8.9	529,474
Asian	13.6	74,976	8.9	48,901	8.5	46,630
Bangladeshi	19.4	12,520	11.5	7,415	8.9	5,739
Chinese	1.5	647	1.1	469	1.1	492
Indian	4.6	8,502	3.1	5,808	3.1	5,698
Pakistani	13.7	21,678	9.5	15,091	10.3	16,311
Asian other	32.5	31,629	20.7	20,118	18.9	18,390
Black	40.7	97,990	27.2	65,452	24.5	58,988
Black African	21.8	32,478	13.7	20,414	12.5	18,565
Black Caribbean	34.0	21,203	22.9	14,300	20.9	13,034
Black other	148.8	44,309	103.2	30,728	92.0	27,389

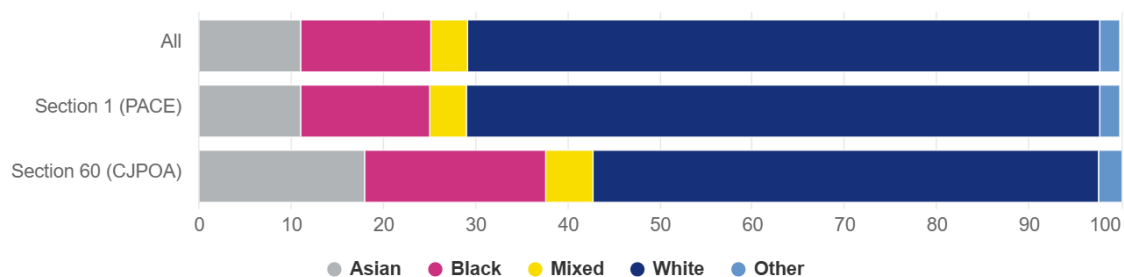
## Improvements

The improved dashboard does not display source data, as it does not contribute to the user's understanding of the information and only adds clutter. For those interested in the data source, it is described in the dashboard (tableau does not allow hyperlinks, otherwise it would be done like this). The absence of unnecessary data helps in answering all questions presented.

### Difficult to Interpret Bar Chart

Location: England and Wales  
Time period: April 2022 to March 2023  
Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Percentage of stop and searches under each legislation, by ethnicity



[Download chart \(PNG\)](#)

**Context: Section 1 and Section 60** are different legal justifications for executing a search on a person. Section 1 is the traditional “probable cause” while Section 60 allows a ranking police officer to designate people in a certain area as subject to searches, without articulatable probable cause for a limited period. This practice has been criticized as allowing police to racially profile people (Stop Watch, *n.d.*; Wiltshire Police, *n.d.*)

This chart helps to compare the different ethnic compositions of the people charged under different justifications for searching. However, the inclusion of the “All” bar is confusing for the reader for two reasons. Firstly “All” and “Section (PACE)” are nearly identical in terms of values. Secondly, all three bars are visually equally dominant and there is nothing to indicate a hierarchy between them. This would be crucial since the closeness of “All”, and “Section 1” data indicates that there are many more Section 1 than Section 60 searches being conducted. This would be an important piece of information.

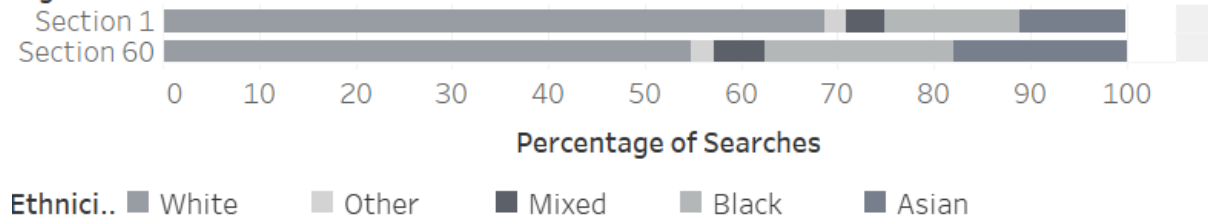
As previously, the title is descriptive without telling the story of the data.

### Improvements Made

By removing the “All” bar some of the above problems are alleviated, it is now clear that the data refers to two separate sections. The color palette is also dialed back to Seattle gray. While this does make it harder to identify the correct ethnicity briefly, this is justified. The colors (and alternatives) previously in use drew too much attention for the importance of the chart (roughly ¼) of the information.

## Minorities are Searched Disproportionately without Probable Cause under Section 60

### Legal Basis



Police f.. Metropolitan Police All - excluding BTP

### Improvements Desired

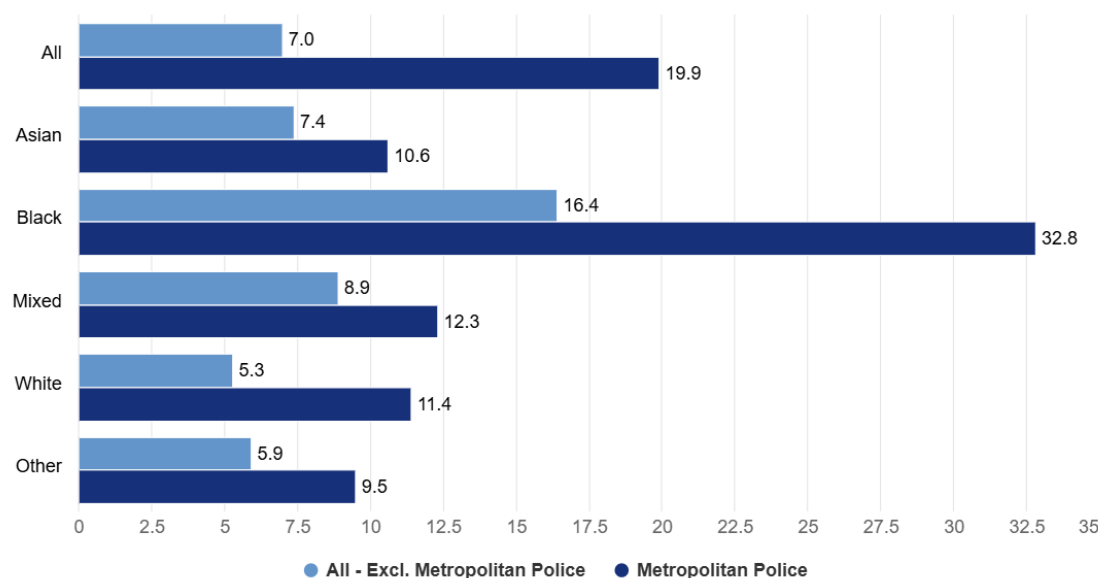
If the data for the number of Stop and Frisks divided up by justification would also be available then it would be good to include this. Particularly the size of the bar could be different between Sections, allowing a visual comparison of the quantities of searches.

By making these changes, question 4 can be answered more clearly, even if more data would be required for a top-tier visualization.

### Further Issue: More of the Same

Location: England and Wales  
 Time period: April 2022 to March 2023  
 Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

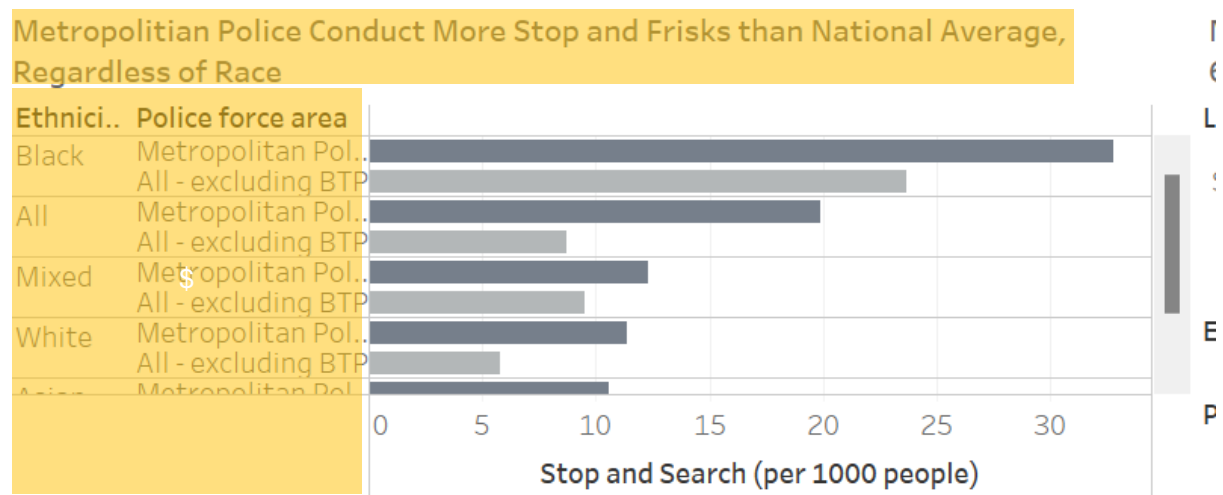
### Stop and search rate for every 1,000 people, by ethnicity in London (Metropolitan Police) and the rest of England and Wales





This graphic suffers from issues previously discussed already. They will not be reiterated in detail. The problems are: Alphabetically ordered ethnicities (rather than along one of the numeric dimensions) and descriptive but not story telling title.

### Improvements



The highlights show the improvements made.

By making these changes, Question 3's answer is improved by more quickly providing an overview of the data and its most important aspects (by putting the highest number first).

### Further Comments, Thoughts, Improvements

Since the Data was coming from different data sources for each chart, it was not possible to build connected interactions.

## Bibliography (APA 7)

- Home Office. (2024, July 3). [Government]. Government UK. <https://www.ethnicity-facts-figures.service.gov.uk/crime-justice-and-the-law/policing/stop-and-search/latest/#by-ethnicity-over-time>
- Makeover Monday. (n.d.). Makeover Monday. Retrieved February 3, 2025, from <https://makeovermonday.co.uk>
- Stop Watch. (n.d.). *Section 1 PACE (suspicion-based search) factsheet*. StopWatch. Retrieved February 3, 2025, from <http://www.stop-watch.org/what-we-do/resources/section-1-factsheet/>
- Wiltshire Police. (n.d.). *Section 60 – without suspicion searches*. Retrieved February 3, 2025, from <https://www.wiltshire.police.uk/police-forces/wiltshire-police/areas/about-us/about-us/section-60--without-suspicion-searches/>

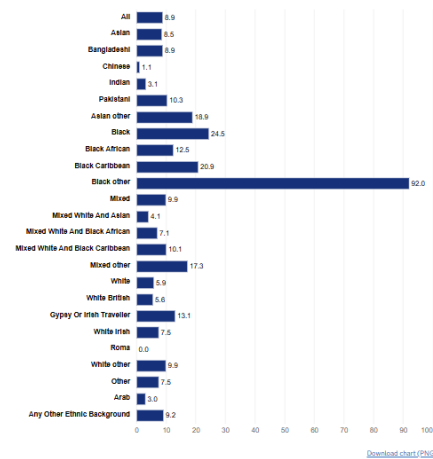
## Appendix 1

### Visualization 1

#### 3. By ethnicity

Location: England and Wales  
Time period: April 2022 to March 2023  
Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Stop and search rate for every 1,000 people, by ethnicity

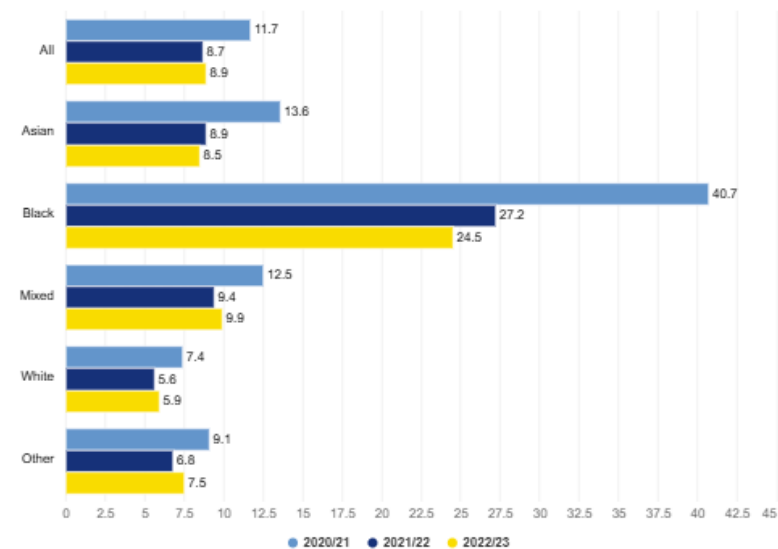


### Visualization 2

#### 4. By ethnicity over time

Location: England and Wales  
Time period: April 2020 to March 2023  
Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Stop and search rate for every 1,000 people, by ethnicity over time (April 2020 to March 2023)

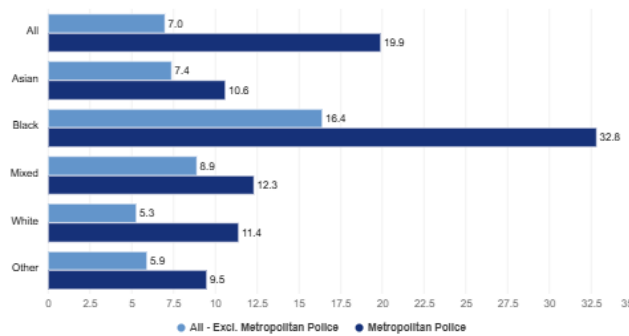


## Visualization 3

### 5. By ethnicity and area

Location: England and Wales  
Time period: April 2022 to March 2023  
Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Stop and search rate for every 1,000 people, by ethnicity in London (Metropolitan Police) and the rest of England and Wales



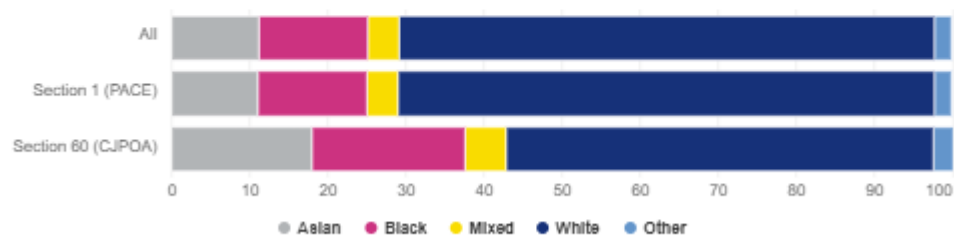
[Download chart \(PNG\)](#)

## Visualization 4

### 6. By ethnicity and legislation

Location: England and Wales  
Time period: April 2022 to March 2023  
Source: [Stop and search and arrests: England and Wales, year ending 31 March 2023](#)

Percentage of stop and searches under each legislation, by ethnicity



[Download chart \(PNG\)](#)