

Occasional Paper: Analysis of the ethnicity of individuals subject to hearings in Scottish courts

April 2023

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1 Background and key points

This occasional paper presents new experimental analysis based on the Scottish Courts and Tribunals Service's (SCTS) management information, on the ethnicity of individuals who were proceeded against and sentenced from April 2016 to February 2023. SCTS receives and holds information on the ethnicity of an accused individual based on data provided by the Crown Office and Procurator Fiscal Service (COPFS), with information originating from Police Scotland. This analysis, a first of its kind in Scotland, explores how individuals move through the criminal justice system and compares the journeys of people from different ethnic groups.

The ethnicity categories used in this analysis are based on those in the 2011 Scottish Census [1], with the African group and Caribbean and Black group combined into one (these two groups are not distinguishable from the SCTS data). The White group is split into White Scottish/White Other British and White Minority Ethnic, as these groups are sufficiently large for analysis (White Scottish is combined with White Other British as these groups are not distinguishable from the SCTS data, and the White Minority Ethnic subgroups are combined into one as they are not individually sufficiently large on their own). In the 2011 Scottish Census, the vast majority of people, 91.8%, identified as 'White: Scottish' or 'White: Other British'. 4.2% identified as belonging to a White minority ethnic group, such as Polish, Irish, Gypsy/Traveller or 'White: Other'. 4% of the population identified as, Asian, African, Caribbean or Black, Mixed, or Other ethnic group. The term 'minority ethnic' is used in this paper to refer to people identifying as any ethnic group other than White Scottish/White Other British.

Findings from this analysis identify, for different ethnic groups, if the number of people with court appearances are in proportion to the composition of the general population in Scotland, and if disposal outcomes are in proportion to court appearances. The analysis compares prosecutions, convictions, sentence outcomes and sentence lengths by ethnic groupings. Data from the 2011 census is applied in comparisons as new figures from Scotland's 2022 Census were not yet available at the time of publication. More recent population estimates indicate that Scotland's population is more diverse now than it was in 2011¹, therefore a degree of caution is required when comparing the paper's findings to the 2011 Scottish Census.

The experimental analysis shows that:

- People in ethnic minority groups are overrepresented in the courts system, when compared to the general population in 2011.
- People in the White Minority Ethnic group have a higher conviction rate than White Scottish/White Other British individuals, while all other ethnic minority groups have a lower conviction rate than White Scottish/White Other British individuals.
- The likelihood of imprisonment is higher for the White Scottish/White Other British ethnic group than all other ethnic minority groups.
- Ethnic minority individuals sentenced to prison receive, on average, longer sentences than White Scottish/White Other British individuals sentenced to prison. Some of this difference is explained by differences in crime type, as more severe crimes tend to receive longer sentences.
- Including all convictions, White Scottish/White Other British individuals were, on average, sentenced to prison for longer than individuals of all other ethnic groups. This is due to the higher likelihood of imprisonment for the White Scottish/White Other British ethnic group.

It should be noted that differences between ethnic groups give an indication of whether there are variations between the justice system journeys of individuals from different groups, rather than a precise estimate of how big the differences are.

Besides an individual's ethnic group, this initial analysis does not control for other key individual characteristics, including sex, age, socio-economic background, geographical location of individuals, offence type or offender

¹ Estimates from the 2019 Scottish Surveys Core Questions (SSCQ) [2] dataset, indicate an increase in the proportion of the population identifying as Asian, African, Caribbean or Black, Mixed, or Other ethnic group (4.7%), and White Minority Ethnic¹ (6.7%), and a decrease in the proportion identifying as White Scottish/White Other British (88.4%).

history, that may also be a source of variance in journeys or outcomes. Therefore, it is not possible to estimate what proportion of the differences found are directly attributable to ethnicity. Moreover, whilst the differences reported may suggest areas which merit further investigation, they should not on their own be taken as evidence of the existence of bias within the justice system.

Overall, the analysis indicates that there are differences between ethnic groups in terms of appearances and outcomes in court hearings. However, caution should be taken when interpreting the results as there are a range of possible explanations for differences, and further analysis is required to determine all contributing factors of difference and their relative importance.

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1.1 Data sources and limitations

This is the first publication using SCTS’s management information to analyse prosecutions, convictions, sentence outcomes and sentence length by ethnic groupings.

The paper relies upon two data sources, which have been linked:

- i. a courts hearings experimental dataset which covers the period from April 2016 to February 2023, and
- ii. a courts disposals experimental dataset which covers the period from April 2017 to February 2023.

Both datasets were initially designed as standalone datasets by justice analysts from the Scottish Government working with the Scottish Courts and Tribunals Service (SCTS). The hearings dataset contains information on each individual hearing that takes place in a Scottish court, while the disposals dataset contains information on each individual sentence imposed for a charge on which an individual was found guilty.

The datasets were not designed to be linked. The resulting analysis from these experimental datasets, especially section 3.2 arising from linkage, must therefore be treated with caution at this stage. It is intended that regular reviews will be undertaken to improve the design and linkage capability of these datasets. Therefore, this analysis will be refreshed if significant changes are made to the datasets.

As noted above, this paper is based on initial experimental analysis, which is yet to be fully developed. Through the analysis some inconsistencies between the two datasets used were noted e.g. some cases appear as completed in the hearings dataset with a conviction, but do not appear in the disposals dataset, which will be investigated further. Also, the estimate of the ethnicity breakdown of the general population depends on the last published census data (from 2011), which is now over ten years old. More recent population estimates from the 2019 Scottish Surveys Core Questions (SSCQ) [2] dataset, indicate that Scotland's population is getting more diverse than it was in 2011. This preliminary analysis will be updated when the 2022 Census data becomes available. Due to these issues the interpretation and use of the results needs to be done with caution.

The comparisons between ethnic groups give an indication of whether there are differences between the justice system journeys of individuals from different groups, rather than a precise estimate of how big the differences are. No causative links can be drawn from these summary statistics. Controls have not been applied for any characteristics besides ethnic group (such as sex, age, average income, geography, offence mix or offender history), so it is not possible to estimate what proportion of differences found are directly attributable to ethnicity. Whilst the differences reported may suggest areas which merit further investigation, additional work controlling for more variables would be required to help determine what the sources of these differences might be.

It should also be noted that in addition to not taking into consideration the set of unique circumstances faced by individuals in the justice system or their individual experiences, similarly, differences within ethnic groupings are not accounted for. Notwithstanding this, it is acknowledged that ethnic groups are not homogeneous and that there will be a range of experiences *within* groups as well as *between* groups.

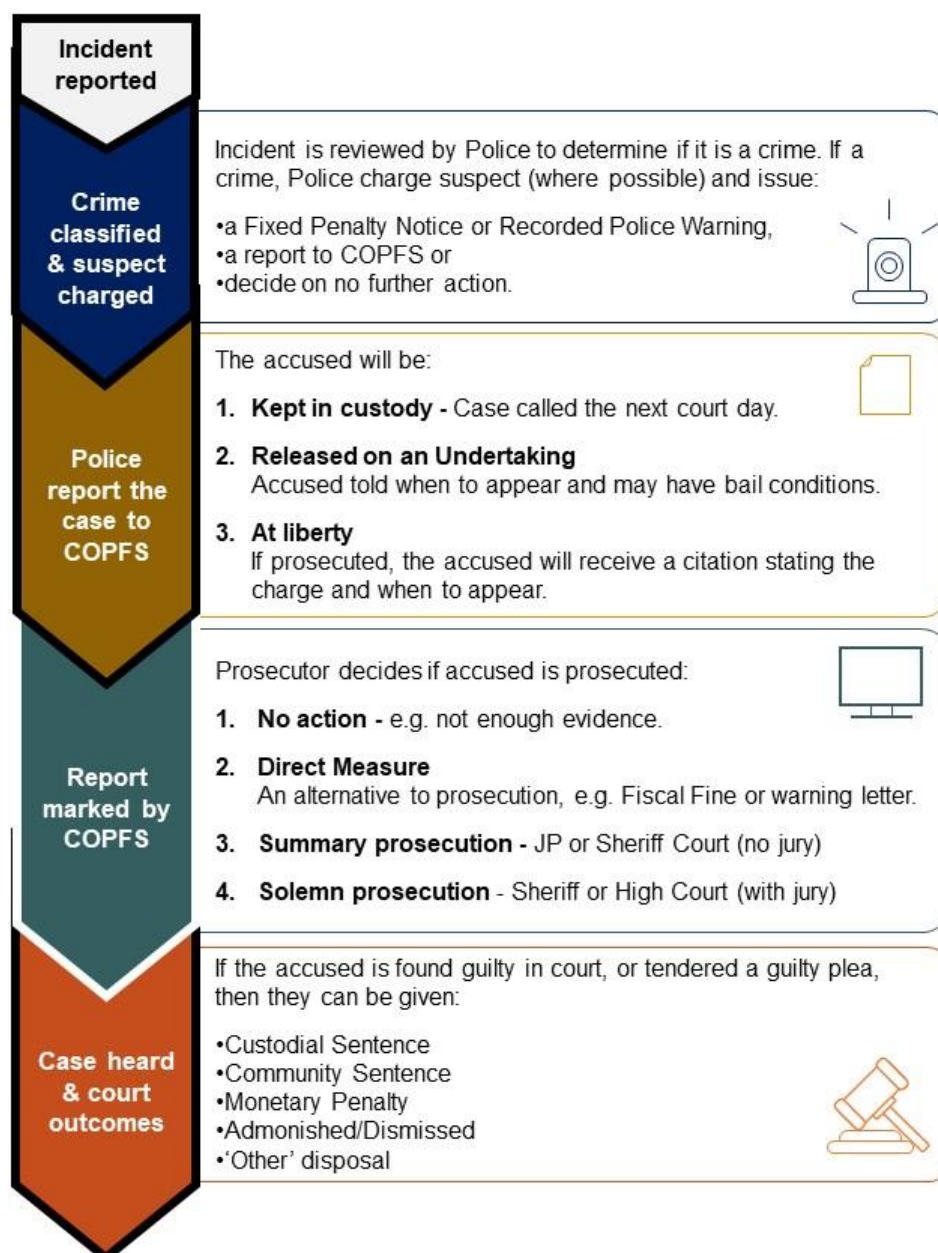
1.2 Background information on criminal cases

To provide context for the results in this publication we provide a brief introduction to the justice process (for more information refer to legislation on criminal procedure in Scotland). Figure 1 shows the criminal justice system in Scotland, from reporting of an incident to sentencing if found guilty (or making a guilty plea) in criminal courts. An individual's journey through the system commences when they are accused of a crime, moving

through several stages eventually leading to a criminal case being called in court in some cases.

Not all reports of crime proceed to court; some conclude at the police stage without being transferred to the COPFS, while some are not cleared up. Also, for some cases that are reported to COPFS, a decision may be taken not to prosecute in criminal courts. If cases are prosecuted in court, this will be either a summary prosecution (starting with a new case calling in the Sheriff or Justice of the Peace court) or a solemn prosecution, which begins with a new “Solemn Petition” case calling in the sheriff court. Solemn prosecutions are for more serious criminal charges and would involve a jury if heard at trial.

Figure 1: How criminal cases progress through the justice system.



In court, depending on the court type, a Judge, Sheriff, Justice of the Peace or a jury will consider all the evidence and reach a verdict. There are three possible verdicts: “guilty”, “not proven”, and “not guilty”. Both “not proven” and “not guilty” mean that the accused is acquitted of the charge [3].

If the person is found guilty, they are sentenced, with possible sentences including prison, mandatory work in the community, a fine, or another type of disposal (e.g. DVLA penalty). In the case of a prison sentence, the length of the custodial sentence is determined by the judge, considering whether or not the offender has prior conviction history, and whether there are any mitigating circumstances [4].

The data used in this publication include the number of people from different ethnic groups who appear in court, are convicted in court, receive each sentence type and the length of sentences where applicable. It therefore reflects decisions made before and throughout an individual’s court journey.

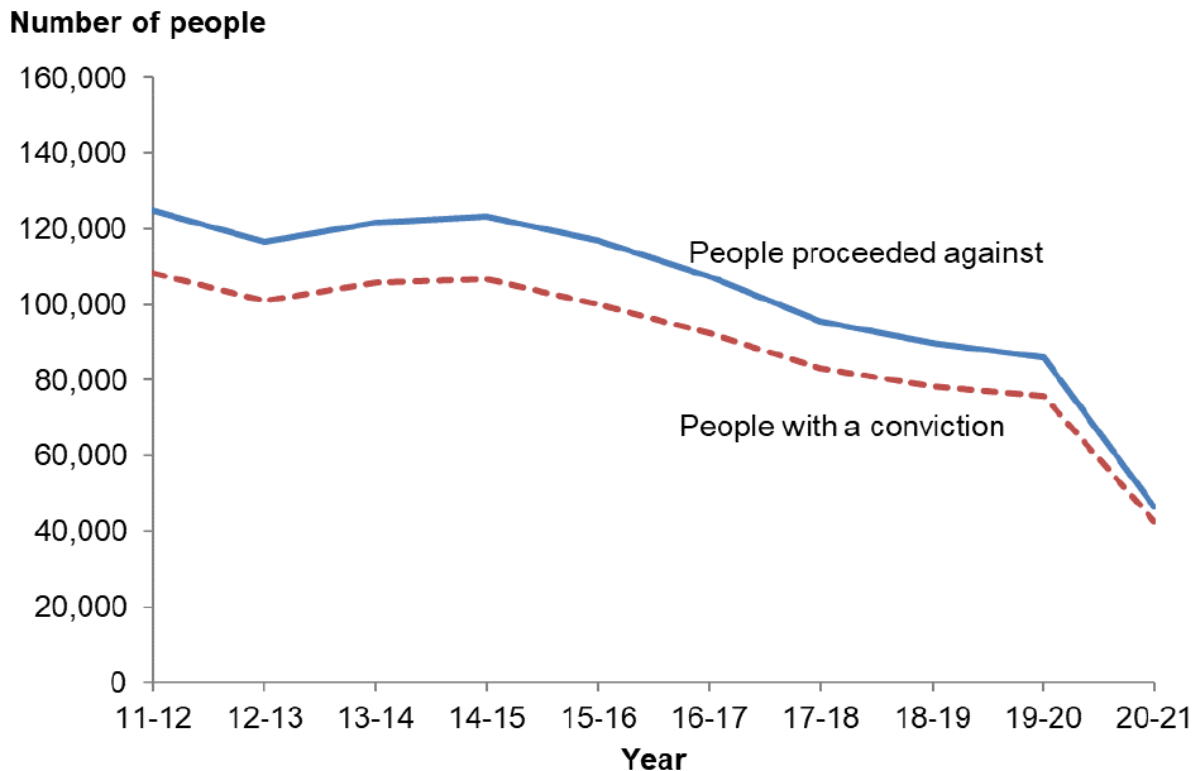
2 Recorded crime and convictions

2.1 Demographics of convictions in Scotland

Official statistics on criminal proceedings in Scotland [5] from the year 2020-21 gives analysis of characteristics of individuals from criminal proceedings concluded in Scottish courts, including age and gender. The ethnicity of individuals is not included.

In 2020-21, there was reduced court activity due to the Covid-19 pandemic. A total of 46,497 people were proceeded against in court, which was 46% less than in 2019-20, as shown in Figure 2. During the same period, the total number of convictions was 42,532 (44% less than 2019-20).

Figure 2: Number of people proceeded against and number resulting in a conviction from April 2011 to March 2021.



2.2 Categorisation of crime types

The Scottish Government has published an update on recorded crime in Scotland for 2021-22 [6]. There are a total of over 500 types of crimes and offences (“crime” is used for more serious criminal acts whereas “offence” is used for those which are less serious). There are a total of six crime groups and three offence groups, as shown in Table 1, covering 50 categories (listed in Appendix A).

Table 1: Crime and offence groups (used from 2021-22).

Crimes	Offences
1. Non-sexual crimes of violence 2. Sexual crimes 3. Crimes of dishonesty 4. Damage and reckless behaviour 5. Crimes against society 6. Coronavirus restriction crimes	7. Antisocial offences 8. Miscellaneous offences 9. Road traffic offences

The number of crimes recorded by Police Scotland in 2021-22 was 286,464, a decrease of 4% compared to 2020-21. This is the lowest level since 1974. Table 2 shows the breakdown of crimes by crime group.

Table 2: Number of crimes recorded by police in 2021-22.

Crimes	Number of crimes	Percentage of total
Non-sexual crimes of violence	69,286	24%
Sexual crimes	15,049	5%
Crimes of dishonesty	92,873	32%
Damage and reckless behaviour	44,284	15%
Crimes against society	61,059	21%
Coronavirus restrictions	3,913	1%
Total	286,464	100%

The overall number of offences recorded by Police Scotland in 2021-22 decreased compared to 2020-21 by 3%, to 180,913. The breakdown by offence group is shown in Table 3.

Table 3: Number of offences recorded by police in 2021-22.

Offences	Number of offences	Percentage of total
Antisocial offences	55,975	31%
Miscellaneous offences	12,951	7%
Road traffic offences	111,987	62%
Total	180,913	100%

3 Analysis and Discussion

In this section we provide information on prosecution, convictions, sentence outcome and sentence length by ethnic group. The journey through the Scottish justice system differs in a qualitative way for White Scottish/White Other British people in comparison to people of other ethnic groups, because the demographics of Scotland mean that the majority of people working in justice system agencies are White Scottish/White Other British people. Therefore, where it is useful for statistical testing to compare

against a reference group, we have used the White Scottish/White Other British group for this purpose.

The statistical methods that are used in this analysis include the Chi-squared goodness fit test, logistic regression and Poisson regression. For more detail on these methods see the technical annex.

3.1 Prosecutions

The courts hearings dataset includes every individual who has been proceeded against on at least one case registered between April 2016 and February 2023. This analysis seeks to identify whether, between different ethnic groups, differences exist in the number of individuals proceeded against. However, the analysis does not identify the underlying factors beneath any observed differences. These may include differences in levels of crime among different groups, and differences in interactions with the justice system. Criminality is related to age and socio-economic status [7], among other factors not considered in this analysis. Furthermore, we do not have access to information on ethnicity among people arrested, and so if there were differences in the number of individuals prosecuted between ethnic groups, we cannot say at what stage these differences arose.

Population information applied in the analysis comes from the 2011 Census [1], and from the 2019 Scottish Survey Core Questions (SSCQ) [2].

The latest definitive information on the population of people from different ethnic groups in Scotland is from over ten years ago, in the 2011 Census. The proportion of the population in various ethnic groups is likely to have changed since 2011, with Walsh et al. [8] suggesting the population of non-white people could double between 2011 and 2031. It is therefore difficult to make accurate up to date comparisons between people who appeared in court between 2016 and 2023 and the general population.

Bearing this in mind, using the 2011 census data, Figure 3 shows some differences between accused individuals and the general population at that time. The proportion of White Scottish/White Other British people among prosecuted individuals is lower than in the general population, whilst for all other ethnic groups, the proportion is higher for the accused population than for the general population in 2011. These differences are statistically significant, but might not be wholly accurate as the Scotland population data is from 2011, and the court data applied is the hearings information from between 2016 and 2023.

In addition, since the ethnicity information in the courts data is generally identified by police officers rather than by the individual, there are potentially identification or recording errors that may be a factor. This is particularly likely to affect smaller ethnicity groups since if there is a misclassification of an individual in a small group as belonging to a larger

group (or the other way around), this will make up a larger proportion of the small group than the large group.

Figure 3: Chart comparing number of prosecuted individuals (from April 2016 to February 2023) and general population (2011 Census), by ethnic group. Individuals with unknown ethnicity are excluded.

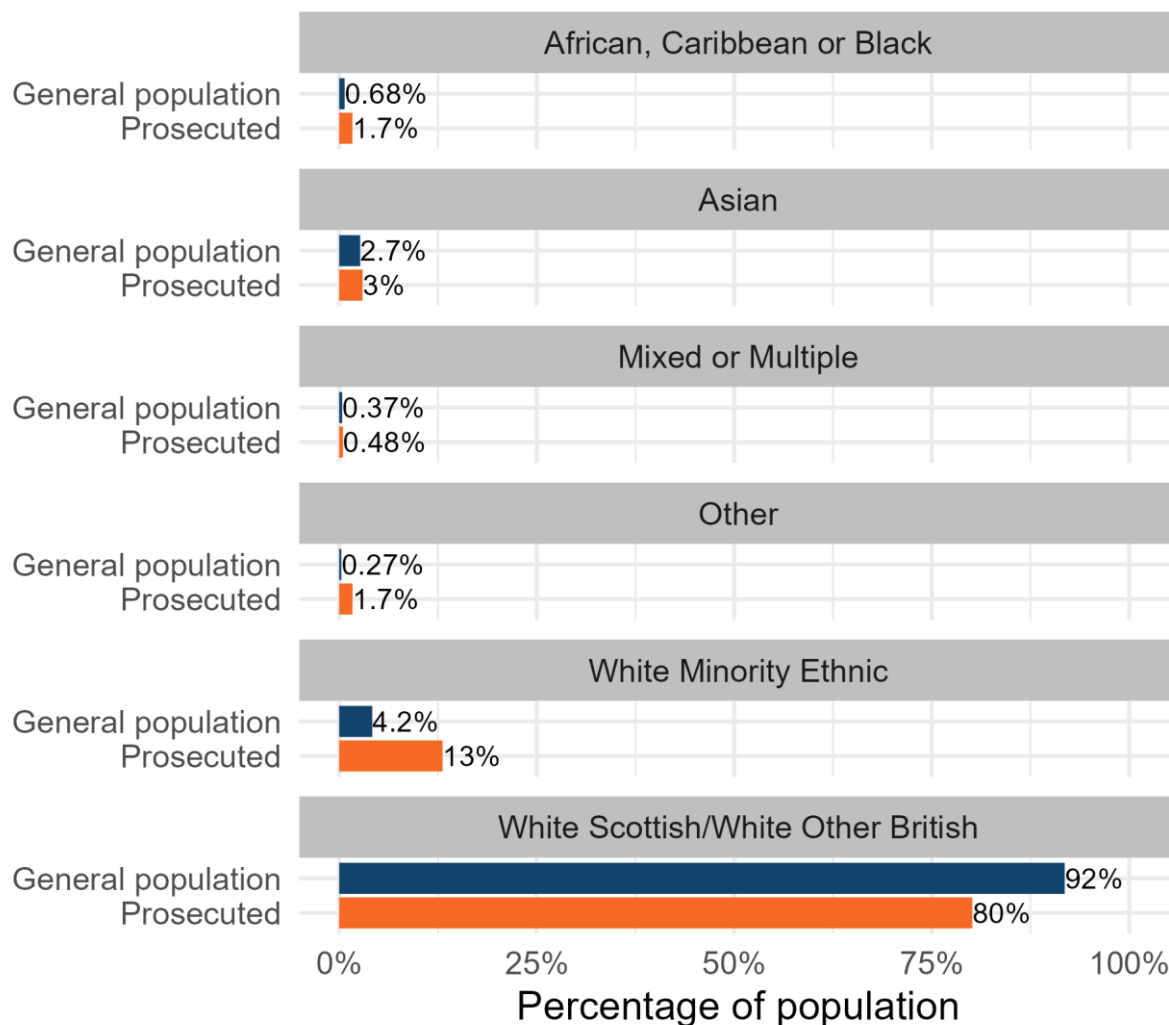


Table 4 shows the extent of change in minority ethnic populations from the 2011 census that would be needed for the differences shown in Figure 3 to not be significant from the White Scottish/White Other British group. The number of people in the general population in the African, Caribbean or Black group, Other ethnic group, and White Minority Ethnic group would need to have grown by 2.7 times (170% increase) and 6.9 times (590% increase) and 3.5 times (250% increase) respectively since the 2011 census, for the observation that they account for a higher proportion of the accused to not be statistically significant.

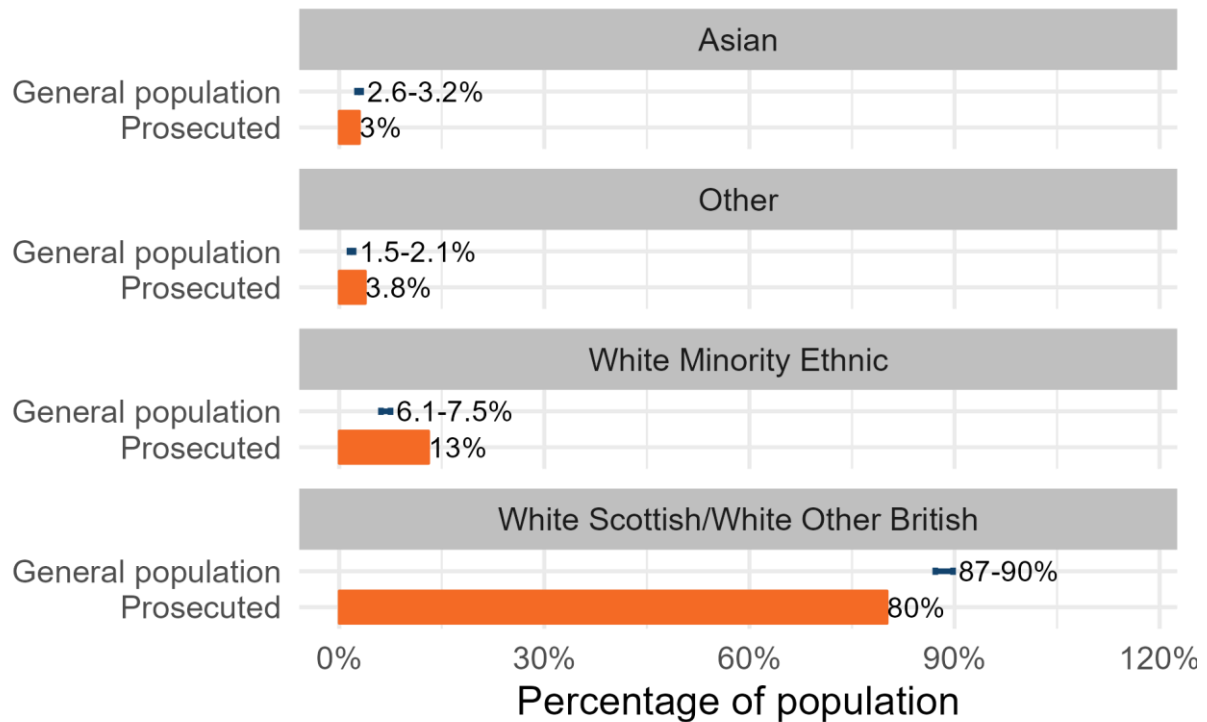
Table 4: Ethnicity population adjustment from the 2011 Census required for the general population ethnicity proportions to not be significantly different from those of prosecuted individuals.

Ethnic group	Adjustment
African, Caribbean or Black	2.7
Asian	1.2
Mixed or multiple ethnic groups	1.4
Other ethnic group	6.9
White Minority Ethnic	3.5

The Scottish Surveys Core Questions (SSCQ) from 2019 provides a more recent estimate of population by ethnic group, but with less precision than the census. Due to the small number of people sampled, only the “White Scottish/White Other British”, “White Minority Ethnic” and “Asian” groups were published in full, with the other groups combined into “All other ethnic groups”. Based on this sample, since 2011, the proportion of the population in the “Asian” group has grown by 1 to 1.2 times (0-20%), which suggests there is no evidence that Asian people are overrepresented among people prosecuted. The proportion of the population in the “All other ethnicity” group (that is, not in the White Scottish/White Other British, White Minority Ethnic or Asian groups) has grown by 1.1 to 1.6 times (10-60%), which is insufficient to explain the differences in figure 3, while the White Minority Ethnic group has grown by 1.5 to 1.8 times (50-80%), which is also not enough to explain the differences in figure 3.

Figure 4 compares the number of prosecuted individuals with the general population using SSCQ population estimates. This matches the evidence from table 4 that the number of people from the “Asian” group that were involved in court hearings between April 2016 and February 2023 was approximately in proportion to the composition of the general population, but that there were apparent differences in other groups. The White Scottish/White Other British group is under-represented among individuals proceeded against in comparison to the 2019 estimate of the general population, while people in the White Minority Ethnic group and all other ethnic groups combined are over-represented.

Figure 4: Chart comparing number of prosecuted individuals (from April 2016 to February 2023) and general population (2019), by ethnic group. Individuals with unknown ethnicity are excluded. Error bars are used for the general population as these estimates are from a sample. Note that the “Other” category includes people in the African, Caribbean and Black and Mixed or Multiple ethnic groups, and is therefore different to the “Other” category in figure 3.



Furthermore, while 92% of the general population was White Scottish/White Other British at the time of the 2011 Census, this included 97% of the population aged 55 and above. Among people 54 and younger, less than 90% identified as White Scottish/White Other British. This is important as, in 2020-21, 61% of convictions were for people aged between 21 and 40, and only 13% of convictions were for those aged 51 and over. Therefore, minority ethnic groups make up a larger proportion of the age range that is more likely to be found guilty of crimes.

Overall, the age of the general population data from the census, the small sample sizes in the SSCQ, and concerns about the accuracy of the data about accused individuals, all reduce our ability to draw firm conclusions about differences between the ethnicities of accused individuals and the general population. There does appear to be evidence that White Minority Ethnic individuals make up a higher proportion of those proceeded against than would be expected purely from the proportion in the general population. There are also apparent differences for people within the African, Black or Caribbean, Mixed or multiple ethnicity, and Other groups, though it is not clear which or how many of these groups show a

difference. A more precise comparison should be possible once the 2022 Census results are available.

3.2 Convictions

The likelihood of an individual being convicted depends on a number of factors, including the type of case or offence, the evidence available, the potential for the accused to plead guilty and a complex set of processes involving many different justice organisations.

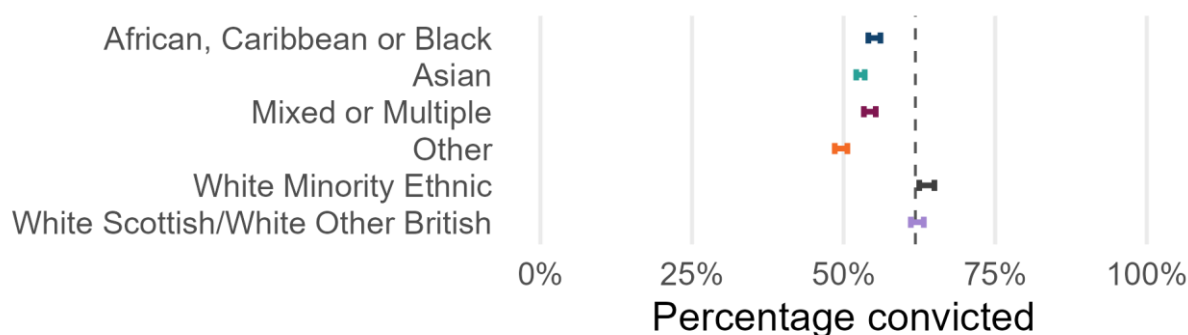
The proportion of cases resulting in a conviction is determined by comparing court data on hearings and disposals from April 2017 to February 2023. For the purposes of this analysis, if an individual is found guilty for at least one charge they are treated as being convicted, and if they are acquitted of all charges they are treated as acquitted. This analysis does not consider differences in the number of charges on which people are convicted.

Problems with the data, including the need to link the two datasets, mean it is difficult to be precise regarding the number of convictions and acquittals. For this analysis, three different approaches to processing the data were applied and the results below present the range of outcomes for the three approaches, from the lowest to the highest.

This part of the analysis seeks to identify any difference in how likely an individual is to be convicted depending on ethnicity, but it does not identify the underlying factors beneath any differences.

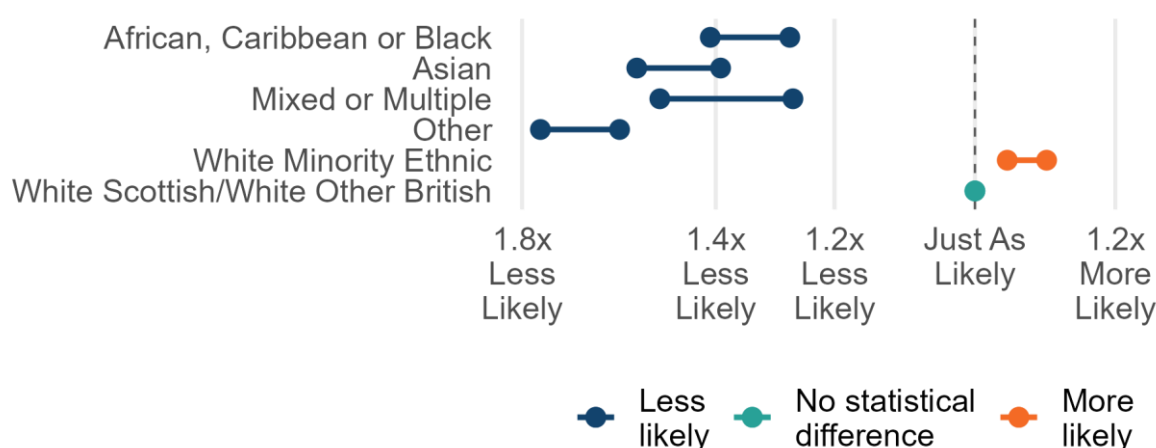
Figure 5 shows the range of possible conviction proportions by ethnicity between April 2017 and February 2023.

Figure 5: Chart showing the proportion of people convicted (out of those whose cases have been completed) between April 2017 and February 2023, by ethnic group. The error bars reflect uncertainties in the recording of available data. The vertical dashed line indicates the overall percentage of people convicted.



As figure 6 shows, the comparative odds of conviction for each minority ethnic group were significantly lower than for the White Scottish/White Other British group, except for the White Minority Ethnic group. This is a statistically significant result (with 95% confidence), as the confidence intervals do not straddle the line where conviction would be equally likely as for the White Scottish/White Other British group. Therefore, out of cases completed in court, the analysis suggests that White Scottish/White Other British and White ethnic minority people were more likely to be convicted than any other ethnic group.

Figure 6: Comparative likelihood (odds ratio) of conviction for people of minority ethnic groups, in comparison to White Scottish/White Other British people (vertical dashed line). The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



3.3 Sentencing outcomes

For those convicted of a crime, the type of sentence that they are given is dependent on a number of factors including the:

- Convicted individual's behaviour between being charged and the case being completed (e.g., attending court, meeting bail conditions),
- Type and severity of crime,
- Convicted individual's criminal record,
- Availability of certain sentences (e.g., Community Payback Orders may require capacity in a specific programme),
- Whether the convicted individual plead guilty, and if so, at what stage of the trial,
- Various processes conducted by organisations involved in progressing cases through the courts.

This analysis includes the following four types of sentences:

- custody (imprisonment, including life sentences and orders for lifelong restriction),
- community sentences (including community payback orders),
- monetary sentences like fines, and
- other sentences.

This part of the analysis seeks to identify any difference in sentencing outcomes depending on ethnicity and on crime type, but it does not identify any other underlying factors beneath any differences.

All sentences are included for each charge on which an individual was convicted. Therefore, there can be multiple sentences of the same type given to an individual on a single case, and multiple different sentence types given to an individual on a single case. It should be noted that due to the analysis being based on sentences issued at charge level in Scottish criminal courts the number of sentences can look higher than they would for sentences data at person level.

Figure 7 shows the percentage breakdown of sentencing outcomes by ethnic group, for individuals that were convicted of charges.

Figure 7: Breakdown of sentences imposed for each ethnic group from April 2017 to February 2023, by type of sentence.

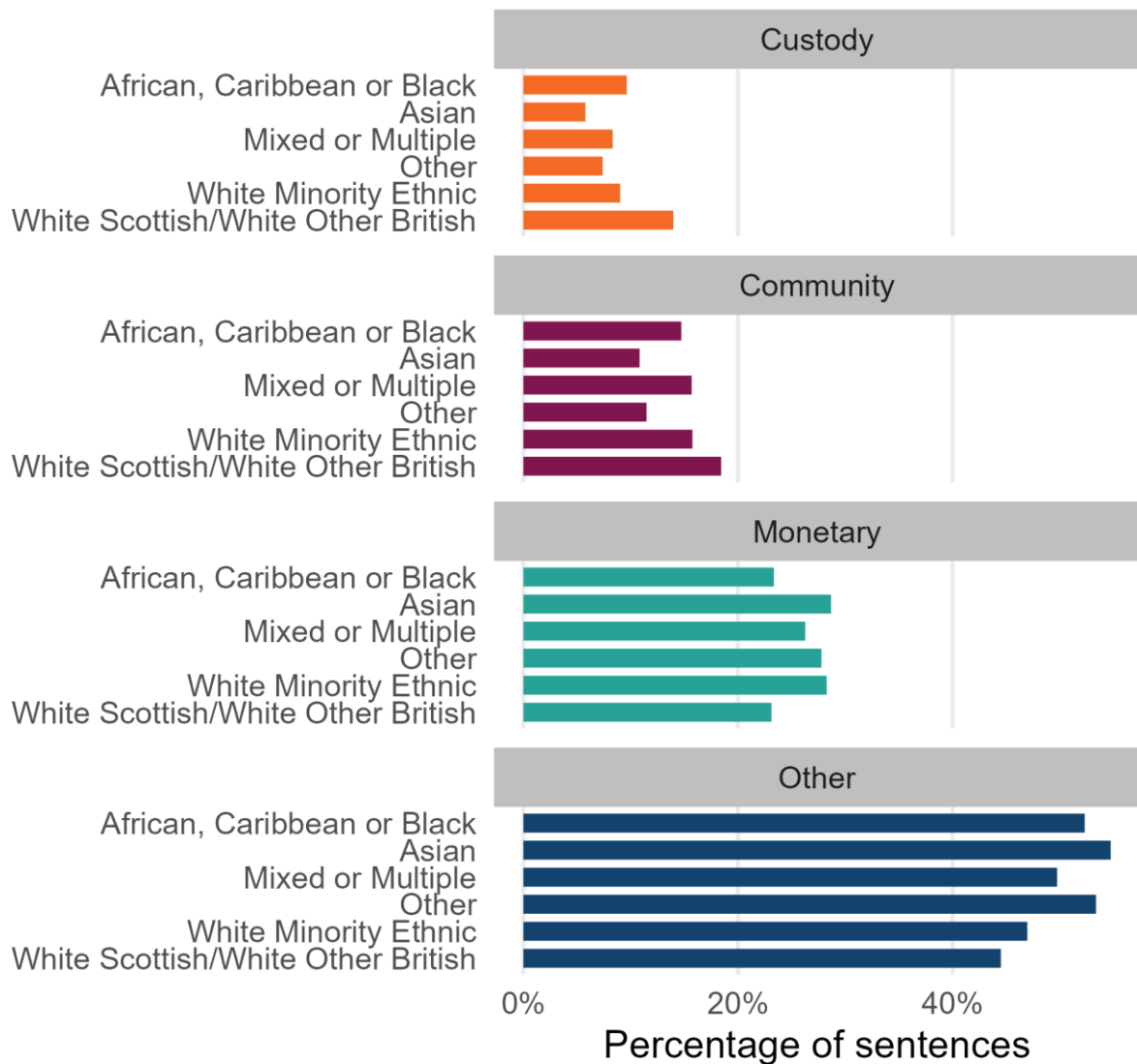
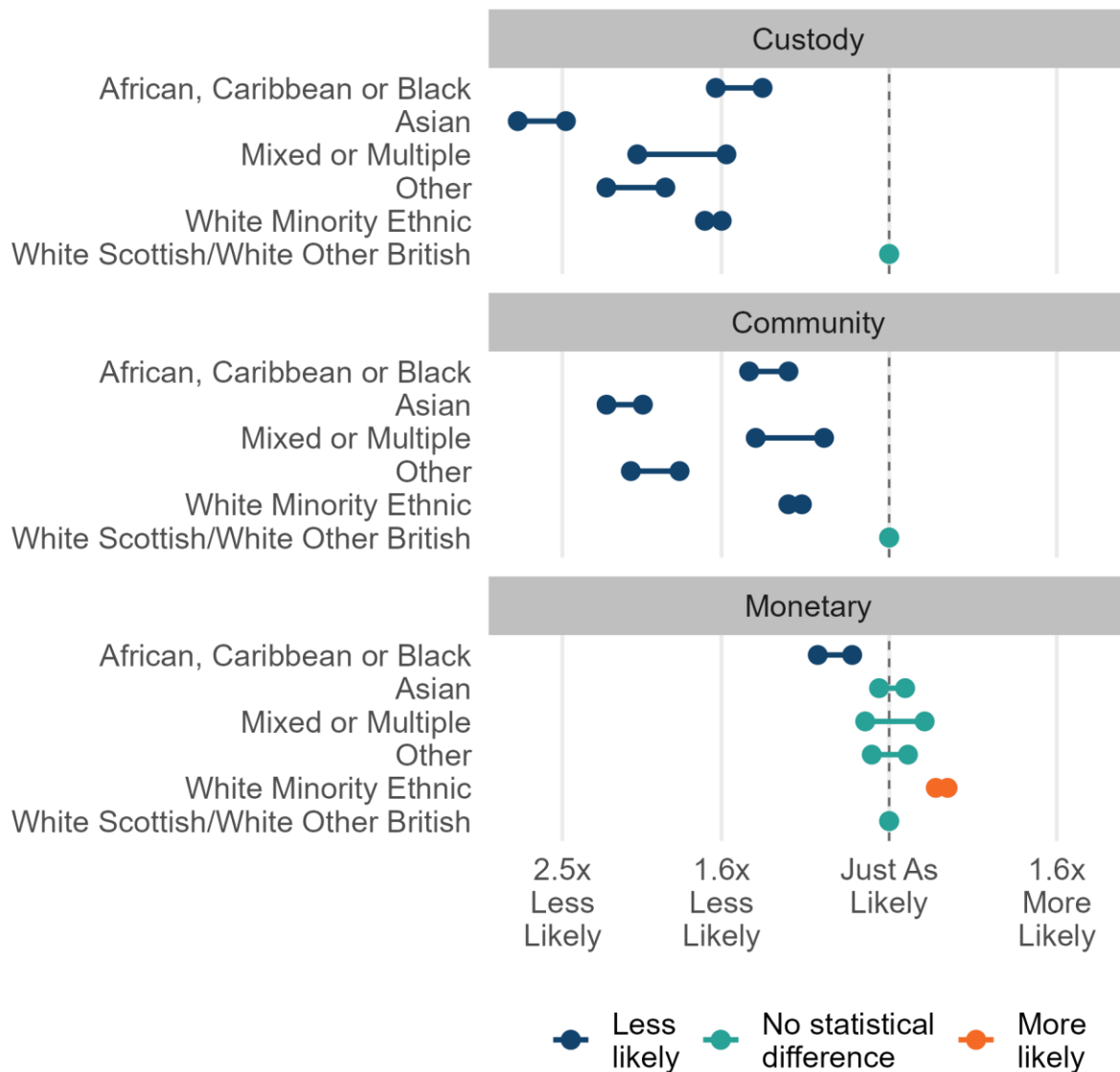


Figure 8 shows that, all minority ethnic groups were comparatively less likely than the White Scottish/White Other British group to receive a custodial (prison) sentence. Of those that didn't receive a prison sentence, people in the minority ethnic groups were less likely than White Scottish/White Other British people to receive a Community sentence. For those that did not receive a custodial or community sentence, African, Caribbean or Black people, were less likely to receive a Monetary sentence and White Minority Ethnic people were more likely to receive a Monetary sentence (with other groups showing no statistical difference from the White Scottish/White Other British group).

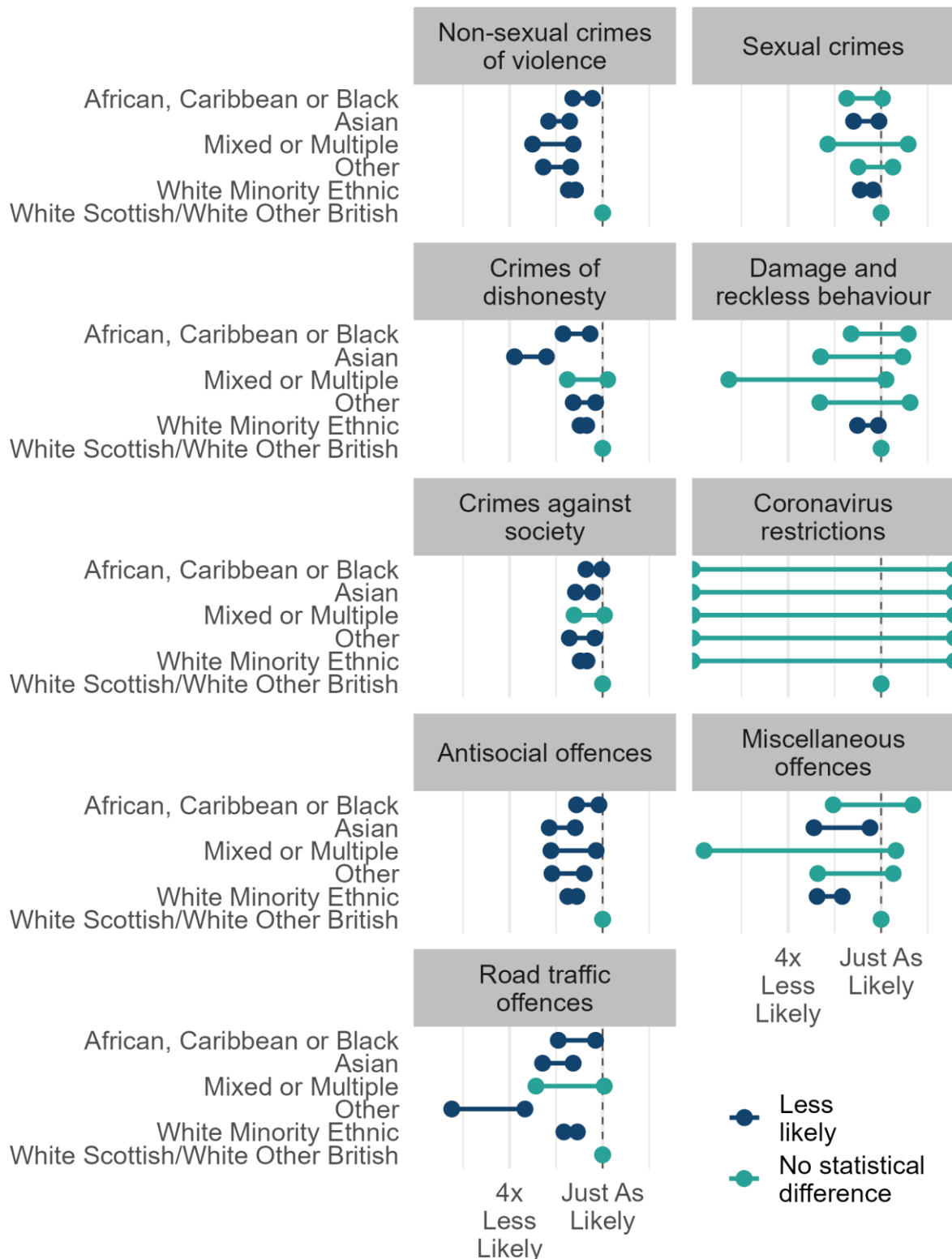
Figure 8: Comparative likelihood (odds ratio) of sentencing outcomes for minority ethnic people in comparison with White Scottish/White Other British people (vertical dashed line), using data from April 2017 to February 2023. Charts for each sentence type are in comparison to all lesser sentences, i.e., “Custody” is in comparison to the likelihood of getting any other type of sentence, “Community” is in comparison to the likelihood of getting a “Monetary” or “Other” sentence, and “Monetary” is in comparison to the likelihood of getting an “Other” sentence. The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



It is useful to look at a breakdown of imprisonment likelihood by crime type, as shown in Figure 9. For some crime types, there is insufficient data for many of the results to be statistically significant. Where there is no statistical difference and the error bars are narrow, it suggests that there is little difference in sentence outcomes for that ethnic group in comparison with White Scottish/White Other British people, for that crime. But when the error bars are wide, it means that there is insufficient data, and it is not possible to draw meaningful conclusions.

For combinations where there is a statistical difference, these differences all show lower likelihoods of prison sentences for minority ethnic groups in comparison to the White Scottish/White Other British group. It is possible that some or all of this difference may be explained by different severities of crime within the crime group that we cannot account for.

Figure 9: Comparative likelihood (odds ratio) of Custody sentences for people of minority ethnic groups, in comparison with White Scottish/White Other British people (vertical dashed line), for particular crime types, based on data from April 2017 to February 2023. The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



3.4 Custodial sentence length

For those sentenced to prison, the length of sentence they are given depends on a number of factors including:

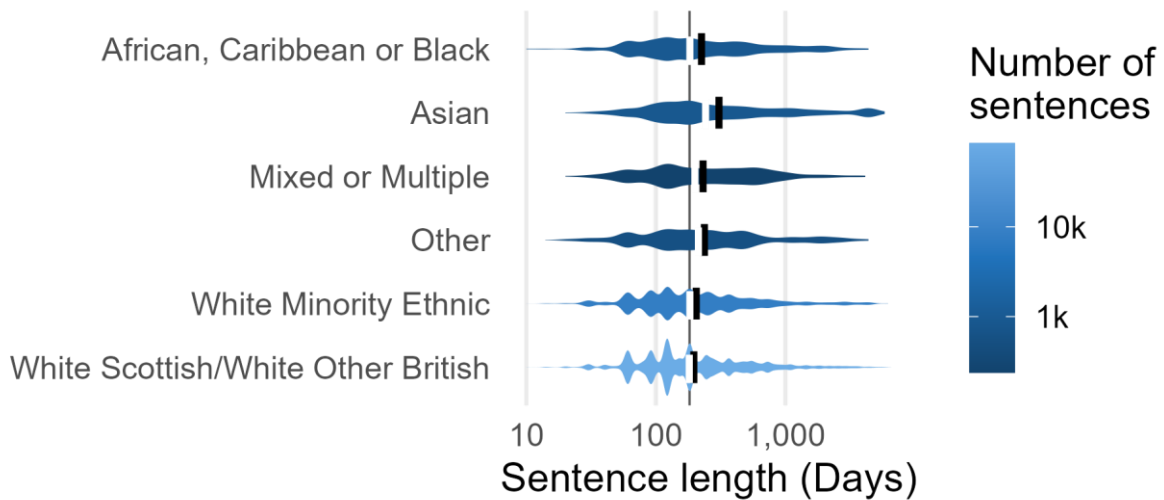
- Type and severity of crime,
- Convicted individual's behaviour during the trial (e.g., attending court, meeting bail conditions),
- Convicted individual's criminal record,
- Whether the convicted individual pleads guilty, and if so, at what stage of the trial,
- The various processes conducted by organisations involved in progressing cases through the courts.

Custodial sentence length is determined from court data on disposals from April 2017 to February 2023. This part of the analysis seeks to identify any differences in the duration of the mean sentence length by ethnicity, but it does not identify the underlying factors behind any differences. In this analysis, prison sentences for Coronavirus restrictions have been removed due to their small numbers.

Figure 10 shows the distributions of sentence length for each ethnic group. For each ethnic group, the vertical thickness of the area indicates the proportion of sentences that are approximately that long. For example, all the areas are thicker at 100 days than at 1,000 days, indicating that there are a higher proportion of sentences of around 100 days than 1,000 days, for all ethnic groups.

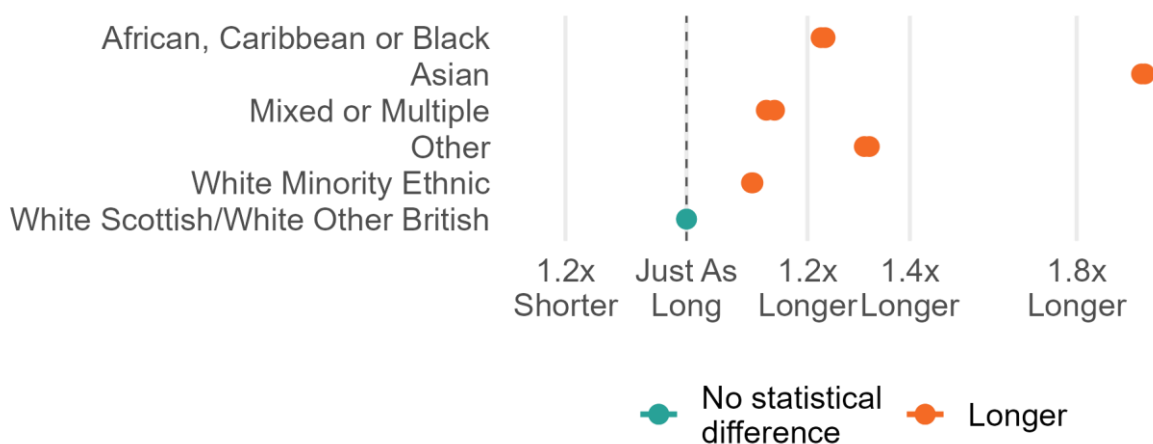
The steep peaks and troughs for the White Scottish/White Other British group are due to sentence lengths being set by weeks, months and years. So, for example, a sentence of 52 weeks (one year) is much more likely than a sentence of 50 weeks or 54 weeks. This shows up better for the White Scottish/White Other British and White Minority Ethnic groups due to higher numbers of sentences. The other charts are smoothed out due to insufficient numbers of sentences to pick up on this pattern. The overall number of sentences is indicated by colour.

Figure 10: Distribution of custodial sentence lengths by ethnicity, using data from April 2016 to February 2023, excluding Coronavirus restrictions. The black lines show the mean sentence length and the white lines show the median, with the grey line in the background indicating the overall median sentence length. The sentence lengths are plotted on a logarithmic scale.



The mean length of sentence for all minority groups are longer than for the White Scottish/White Other British group, with statistical significance in all cases, as shown in Figure 11. In particular, those in the Asian grouping received on average around two times as long sentences as White Scottish/White Other British individuals. As before, some differences are explained by differences in crime types, as more severe crimes tend to receive longer sentences.

Figure 11: Chart depicting the relative custodial sentence lengths for people of each minority ethnic group in comparison to White Scottish/White Other British people (vertical dashed line). The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



As figure 12 shows, the differences in sentence lengths between ethnic groups are reduced when looking at each crime type. Some large differences remain, and for most combinations of crime type and ethnic group, the sentence lengths are on average longer than for the White Scottish/White Other British reference group.

For crimes against society, all minority ethnic groups received, on average, longer sentence lengths than the White Scottish/White Other British group. This was relatively small, though still statistically significant, for the White Minority Ethnic group. For all other ethnic groups, prison sentences for this crime group were, on average, comparatively 1.5 to 2 times longer.

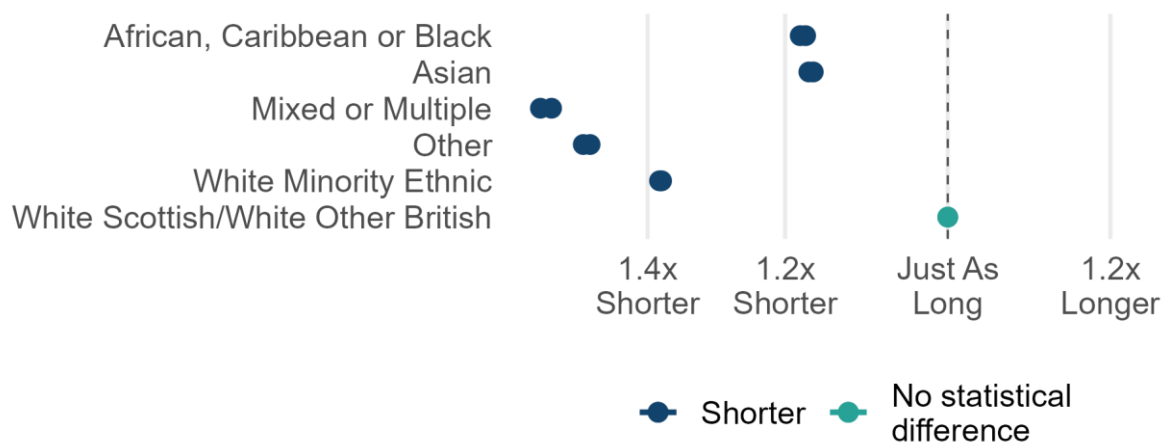
Figure 12: Chart depicting the relative sentence lengths for people of each minority ethnic group in comparison to White Scottish/White Other British people (vertical dashed line), accounting for crime group (severity of crime may still be variable within each crime group). The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



Figure 8 in section 3.3 showed that people from minority ethnic groups were overall less likely to receive a custodial sentence, if convicted, than White Scottish/White Other British people. This could have an influence on the differences seen in figures 11 and 12, because replacing a non-custodial sentence for an individual with a custodial sentence of below average length will reduce the average sentence length.

We can examine this effect by including all convictions, and treating a non-custodial sentence as a length of 0 days. Figure 13 shows that in this case, sentence lengths are significantly shorter for all minority ethnic groups than the White group. Therefore, overall, convicted White Scottish/White Other British people are likely to be sentenced to more time in prison than people in minority ethnic groups.

Figure 13: Chart depicting the relative sentence lengths for people of each minority ethnic group in comparison to White Scottish/White Other British people (vertical dashed line), accounting for crime group (severity of crime may still be variable within each crime group). All those convicted of a charge are included, including those without a prison sentence. The error bars show the 95% confidence interval for this result, and the colour indicates whether the result is statistically different from the White Scottish/White Other British group.



4 Conclusions

This paper has examined courts data on the ethnicity of individuals who were proceeded against and sentenced from April 2016 to February 2023. As noted, there are difficulties in accurately comparing the ethnicity of people accused in court with the general population which makes it difficult to draw firm conclusions. Overall, the analysis indicates there is a difference between ethnic groups in terms of appearances and outcomes in court hearings. However, caution should be taken when interpreting the results as there are a range of possible explanations for the differences and further analysis is required to determine what the sources of these differences might be.

Bearing in mind the lack of more recent census population data, it is likely that the proportion of individuals in the combined African, Caribbean or Black, White Minority Ethnic, and “Other” ethnic groups was higher amongst accused individuals than in the general population. Differences are also observed in the proportion of people from certain ethnic groups being convicted. White Scottish/White Other British and White Minority Ethnic individuals appear more likely to receive a guilty verdict than individuals from other ethnic groups.

The analysis suggests that custodial sentences were given to White Scottish/White Other British individuals in higher proportion than overall convictions but, if they did receive a custodial sentence, individuals from minority ethnic groups were likely to receive a longer sentence than White Scottish/White Other British individuals. Including all convictions, White Scottish/White Other British individuals were, on average, sentenced to prison for longer than individuals of all other ethnic groups. This is due to the higher likelihood of imprisonment for the White Scottish/White Other British ethnic group.

5 Further Work

This analysis has identified some trends in prosecutions, convictions and sentencing. Due to the data issues identified in earlier sections, care needs to be taken when interpreting these results. As a consequence, the analysis in this report is experimental and is not on its own sufficiently robust to be used, for example, to inform policy recommendations. As this is the first iteration of this analysis we anticipated that there could be issues with the data and work is underway to make improvements.

Furthermore, the current analysis has relied on population estimates from the 2011 census data for comparisons of findings to the general population. This could be updated with 2022 Census data after it is available, so as to provide a more up-to-date assessment of differences across ethnic groups.

While the current analysis has not been able to consider any causal factors that might explain the observed trends, it does identify where further work could be undertaken to explore the trends identified.

6 Technical Annex

6.1 Data collection and the datasets

Multiple data files were provided to Scottish Government Justice Analytical Services (JAS) by SCTS, covering the period April 2016 to February 2023. The data are management information and have not been subject to the same quality assurance processes as data used for Official Statistics and some data improvements are required. Many of the data improvement issues identified are the subject of ongoing reviews, hence these results are to be considered experimental analysis and the observations treated with caution.

Information on the Scottish population by ethnicity was taken from Scotland's Census data 2011 [1]. The values that were extracted from the Census are presented in Table 5.

Table 5: Scotland population by ethnicity (2011).

Ethnicity	Scotland population	Proportion
African, Caribbean or Black	36,178	0.68%
Asian	140,678	2.7%
Mixed or Multiple	19,815	0.37%
Other	14,325	0.27%
White Minority Ethnic	221,620	4.2%
White Scottish/White Other British	4,862,787	92%
Total	5,295,403	

The hearings and disposals datasets provided by SCTS were not designed to be linked. As discussed in section 3.2, doing so results in some inconsistencies in the number of convictions and acquittals observed. In order to test the sensitivity of the results to these inconsistencies, three processing methods were applied:

- Include all cases where both datasets are consistent (in terms of acquittals and convictions) and exclude other cases.
- Treat all cases where at least one of the datasets indicates a conviction as a conviction, and include acquittals only where the datasets are consistent.

- Treat all cases where at least one of the datasets indicates an acquittal as an acquittal, and include convictions only where the datasets are consistent.

6.2 Dependent and independent variables

The dependent variable (sometimes known as the response, outcome, target or criterion variable) is one which depends on other factors. This analysis involves multiple research questions, each research question has different dependent variables. These include:

- Charges that the individual was found guilty of,
- Type of sentence, such as fine, community sentence, or imprisonment, and, and
- Length of prison sentence in days.

Information on the “charges that the individual was found guilty of” is used to find out whether an individual has been convicted of a crime or not, and is used for the research question: is there a relationship between verdict and ethnicity? Information on “type of sentence, such as fine, community sentence, or imprisonment” is used to answer the research question: if guilty, is there a relationship between sentence and ethnicity? Lastly, the “length of prison sentence in days” stores the sentence length for each charge, and is used to examine whether there is a relationship between sentence length and ethnicity.

Independent variables (sometimes the predictor, explanatory or regressor variables) are those analysed to study how they may affect the value of the dependent variables. The analysis aims to determine the ethnicity characteristics of individuals. Therefore, the independent variable is “ethnicity”. The breakdown of how ethnicity and crime type are grouped can be found in Appendix B and Appendix A respectively. These are grouped into six ethnic groups, and nine disposal crime types, as shown in table 6.

Table 6: Ethnic groups and disposal crime types.

Ethnic groups	Disposal crime types
African, Caribbean or Black Asian Mixed or multiple ethnic groups Other ethnic group White Minority Ethnic White Scottish/White Other British	Non-sexual crimes of violence Sexual crimes Crimes of dishonesty Damage and reckless behaviour Crimes against society Coronavirus restrictions Antisocial offences Miscellaneous offences Road traffic offences

6.3 Statistical testing method

There are number of statistical testing methods available, from which the selection of a statistical test depends on the purpose of statistical testing, type and the distribution of a variable, and the number of groups in a variable. Based on the above prerequisites, four tests were selected, depending on the question: Chi-Squared goodness of fit test, Logistic Regression, Multinomial Regression, and Poisson Regression. The breakdown of the testing method for each research question is as follows:

- Do people appearing in court represent the general population/people in prison? (Chi-Squared goodness of fit test)
- Is there a relationship between court outcome and ethnicity?
- Is there a relationship between verdict and ethnicity? (Logistic Regression)
- If guilty, is there a relationship between sentence and ethnicity? (Multinomial Regression)
- If sentenced to prison, is there a relationship between sentence length and ethnicity? (Poisson Regression)

6.3.1 Chi-squared test

The chi-squared test is a nonparametric statistical test that is used to determine whether there is a difference between observed values and expected values that is due to a true difference in the population or due to sampling error. The observed values are the frequencies from dataset. The expected values are the frequencies expected based on the null hypothesis. There are three main types of chi-square tests, goodness of fit test, independence test and homogeneity test. We are mainly focusing on the goodness of fit test and independence test.

Chi-squared goodness of fit is also referred to as the chi-square test for a single sample. It is used to test hypotheses about the proportions of population distribution or specified frequencies in null hypothesis and is suitable for samples with two or more categories [9].

6.3.2 Logistic Regression

Logistic regression [10], also known as binomial regression, is used for predicting the binary outcome of a categorical dependent variable, to examine the effect of a number of independent variables on the binary dependent variable. It models the odds/log odds/probability of one of the two outcomes occurring. The odds are a way of representing probability. The odds of an event of interest E, is the ratio of the probability that event E occurs to the probability that it does not occur.

This results in a different interpretation of a comparison such as "x times more likely" than when we use a percentage probability. For example, if an individual were equally likely to be convicted or acquitted, this would be an odds ratio of 1 (equivalent to 50% probability of conviction). In the odds ratio interpretation, an individual that is 2 times more likely to be convicted would therefore have an odds ratio of 2 (equivalent to 66.7% probability).

6.3.3 Poisson Regression

Poisson regression can be used to predict a dependent variable that consists of count data, given one or more independent variables. The variable we want to predict is often called the dependent variable. The variables we are using to predict the value of the dependent variable are often called the independent variables. The Poisson regression model assumes that the response variable has Poisson distribution. Rather than odds ratio in logistics regression, relative risk ratios are used for Poisson regression for count variables [11].

7 Disclaimer

The datasets used in this analysis were provided to Scottish Government JAS Division from SCTS systems. They were specifically designed to assist JAS with the analysis of remand and bail and to analyse the impact of presumption against short sentences. Therefore, the datasets were not designed for the type of analysis undertaken in this study and the results must be treated with caution.

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Appendix A – “Top 50” crime types

Crime ID	Crime/offence category	Crime/offence group label
1	Murder and culpable homicide	Non-sexual crimes of violence
2	Causing death by driving dangerously	Non-sexual crimes of violence
3	Serious assault and attempted murder	Non-sexual crimes of violence
4	Common assault	Non-sexual crimes of violence
5	Robbery	Non-sexual crimes of violence
6	Domestic Abuse (Scotland) Act 2018	Non-sexual crimes of violence
7	Other non-sexual violence	Non-sexual crimes of violence
8	Rape & attempted rape	Sexual crimes
9	Sexual assault	Sexual crimes
10	Causing to view sexual activity or images	Sexual crimes
11	Communicating indecently	Sexual crimes
12	Threatening to or disclosing intimate images	Sexual crimes
13	Indecent photos of children	Sexual crimes
14	Crimes associated with prostitution	Sexual crimes
15	Other sexual crimes	Sexual crimes
16	Housebreaking	Crimes of dishonesty
17	Theft by opening lockfast places	Crimes of dishonesty
18	Theft from a motor vehicle	Crimes of dishonesty

Crime ID	Crime/offence category	Crime/offence group label
19	Theft of a motor vehicle	Crimes of dishonesty
20	Shoplifting	Crimes of dishonesty
21	Other theft	Crimes of dishonesty
22	Fraud	Crimes of dishonesty
23	Other dishonesty	Crimes of dishonesty
24	Fire-raising	Damage and reckless behaviour
25	Vandalism	Damage and reckless behaviour
26	Reckless conduct	Damage and reckless behaviour
27	Crimes against public justice	Crimes against society
28	Weapons possession (not used)	Crimes against society
30	Drugs - Supply	Crimes against society
31	Drugs - Possession	Crimes against society
32	Other crimes against society	Crimes against society
33	Coronavirus restrictions	Coronavirus restrictions
34	Threatening and abusive behaviour	Antisocial offences
35	Racially aggravated conduct	Antisocial offences
36	Drunkenness and other disorderly conduct	Antisocial offences
37	Urinating etc.	Antisocial offences
38	Community and public order offences	Miscellaneous offences
39	Environmental offences	Miscellaneous offences

Crime ID	Crime/offence category	Crime/offence group label
40	Licensing offences	Miscellaneous offences
41	Wildlife offences	Miscellaneous offences
42	Other misc. offences	Miscellaneous offences
43	Dangerous and careless driving	Road traffic offences
44	Driving under the influence	Road traffic offences
45	Speeding	Road traffic offences
46	Unlawful use of vehicle	Road traffic offences
47	Vehicle defect offences	Road traffic offences
48	Seat belt offences	Road traffic offences
49	Mobile phone offences	Road traffic offences
50	Other road traffic offences	Road traffic offences

Appendix B – Ethnic groups

Ethnic group used in analysis	Ethnicity description in data
White Minority Ethnic	Other White
White Scottish/White Other British	Other White British
White Scottish/White Other British	White British
White Scottish/White Other British	White English
White Minority Ethnic	White Gypsy/Traveller
White Minority Ethnic	White Irish
White Scottish/White Other British	White Northern Ireland
White Minority Ethnic	White Polish
White Scottish/White Other British	White Scottish
White Scottish/White Other British	White Welsh
Mixed or Multiple	Any Mixed Ethnic Group
Asian	Bangladeshi
Asian	Chinese
Asian	Indian
Asian	Other Asian
Asian	Pakistani
African, Caribbean or Black	African
African, Caribbean or Black	Other African
African, Caribbean or Black	Black Scottish or Other Black
African, Caribbean or Black	Caribbean
African, Caribbean or Black	Caribbean or Black
African, Caribbean or Black	Other African, Caribbean or Black
Other	Arab

Ethnic group used in analysis	Ethnicity description in data
Other	Other Ethnic Group
Unknown	Unknown



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