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Can Crime and Detections be counted differently: Demonstrating the Cambridge Consensus Statement for Counting Crime and Detections in Devon & Cornwall?

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1. Thesis Research Contract

Thesis Title

Can Crime and Detections be counted differently: Demonstrating the Cambridge Consensus Statement for counting crime and detections in Devon & Cornwall?

Research Questions

The key research question is:

> Compared to the current method of counting, how does the crime and policing statistical profile for Devon & Cornwall, during 2015-20, differ when the method described in the Cambridge Consensus Statement is applied?

Sub-questions that the thesis will aim to answer in order to provide an answer to the key research question:

a) How different is the trend in annual crime count from the trend in annual total Cambridge Crime Harm Index (CHI) for victim- and witness-reported crimes that occurred in each year?
b) What is the trend in the Historic Offences Crime Harm Index (HOCHI) for cases reported but occurred in prior years?
c) What offences in Devon & Cornwall can be identified as proactively detected in 100% or in a high proportion of cases, and what proportion of cases arguably belong in a Proactive Policing Index (PPI).
d) To what extent does the removal of the cases (identified in c.) change the CHI and crime count totals? Is the PPI consistent on a year-on-year basis or highly variable?
e) How can company-detected crimes be identified within the existing crime records systems, and what proportion of crime count and CHI is extracted from the total in creating a Company-Detected Crime Harm Index (CDCHI)?

f) How does the standard detection-rate for all offences change if those offences are weighted by CHI scores to create a Harm Detection Fraction (HDF)?

g) If the NPCC (National Police Chiefs' Council) were to consider endorsement of the creation of a parallel statistical series based on the method detailed in the Cambridge Consensus Statement, what would be the major definitional and methodological or data processing issues to be addressed?

Research Design

This research is an application of the recommended methodology for counting crime and policing described in the Cambridge Consensus Statement; a 'proof of concept' of the blueprint. The research uses descriptive and comparative analysis to describe the statistical series facilitating the comparison against the current method of counting crime. The aim is to assess whether, and how, the recommended counting method yields different results to the current method of counting crime.

Data and Methodology

Unit of analysis: An individual crime record relating to an offence that is classed as notifiable (to the Home Office) where the date that the crime or outcome was recorded is within the parameters of the defined time period. The analysis will be based on crime cases recorded by Devon & Cornwall Police during the most recent five performance years: 01/04/2015 – 31/03/2019 (n=471,496) and crime cases where an offender outcome (detection) was recorded during the same time period (n=87,411). A business intelligence tool (QlikView), linked to the crime record management system used by Devon & Cornwall Police, will be used to extract the data using already developed management information reports. Data cleansing will be required to ensure consistency of offence groupings over the five-year period due to changes in the categorisation of crime. The data variables extracted will enable coding to identify which statistical series each crime case relates to: victim and witness reported crimes; crimes committed in-year reported or previous year(s), offence types which are, or in the majority of

cases, identified by police; and crimes identified by companies and other organisations. The harm index scores will be matched to the data from the Cambridge Crime Harm Index look-up table (updated May 2020).

Analytical Methods

The analysis will be based on the development and calculation of the statistical series outlined by the Cambridge Consensus Statement; to then compare with the current method of counting crime and detections. The findings will be based on descriptive and comparative analysis; comparing the recommended methodology for counting crime and police activity to current methods to identify whether it yields different results. Any comparisons will be made through description rather than based on statistical testing.

Findings

Being the first application of this methodology, there is no comparative between-force data available. The key findings are outlined below:

- Over the five-year period, crimes reported (in-year committed) by victims and witnesses account for 74% of the count of crime and 68% of the total harm-score recorded. An increasing trend is evident in both the total count and the harm-score recorded; however, a slight decrease in the number of crimes recorded in the most recent year has amplified the increasing divergence between crime count and harm-score. This infers that the service is managing increasing levels of harm.
- Crimes reported by victims and witnesses that were committed during previous reporting years only account for 3% of the total count, yet account for 23% of the total harm-score recorded. This is mainly driven by the reporting of historic rape and other sexual offences.
- Crimes discovered through proactive policing equates to 8% of the total harm-score recorded. This is one percentage-point higher than the 7% that such crimes account for in the count, inferring the proactive pursuit of harm (rather than volume).

- Crimes detected by companies or other organisations account for only 1% of the total harm-score recorded, yet account for 16% of the total count.
- The HDF, in relation to crimes reported by victims and witnesses only, has consistently been higher than the detection-rate based on count, again inferring the pursuit of detecting harm.

The application has shown a number of dimensions in relation to crime and policing activity; it does yield different and more insightful results than simply reporting crime as a total recorded crime rate per 1,000 resident population. However, to adopt the methodology consistently across all forces, there is a requirement for a comprehensive look-up table to be available including Cambridge-CHI scores for all crimes and an identifier for those crimes classed as proactively identified by the police. This application provides a step towards such a look-up tool.

Policy Implications of the findings

The aim of this research is to progress the theory outlined by the Cambridge Consensus Statement by advancing the techniques/mechanics on which the statistical series are based upon and demonstrating whether the approach yields different results. If the answer to the research question is that the recommended methodology yields different, useful and insightful results, this could provide a tipping point for national (and potentially global) change in how crime statistics are reported and considered. If proved to be beneficial, applying the recommended methodology has the potential to increase public-confidence and legitimacy by providing a more transparent overview of crime in their area and a measure of police activity. In addition, the methodology has the potential to assist the police service to make evidence-based decisions on prioritising and focussing resources.

2. Acknowledgements

I remember when I was 18 years old being asked the question “Wouldn’t you like to study at the University of Cambridge?” (Mom and Dad, 1997)… Well ‘several’ years later, I have done it! To my parents, for all the support you have given me, thank you.

Undertaking a Master’s degree, balanced with work, was a daunting prospect. Then there was a global pandemic which added significant challenges. So probably more than at any other time there are a number of people that I must thank (in no particular order).

Alexis and Gill, for your support throughout my career and encouragement to undertake this amazing experience.

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3. Contents

3.1 Table of Contents

3.2 List of Tables

3.3 List of Figures

3.4 List of Appendices

3.5 Glossary of abbreviations

APCC	Association of Police and Crime Commissioners
CDCHI	Company-Detected Crime Harm Index
CDI	Crime Data Integrity
CHI	Crime Harm Index
CSEW	Crime Survey for England and Wales
CSS	Crime Severity Score
HDF	Harm Detection Fraction
HMICFRS	Her Majesty's Inspectorate of Constabulary and Fire & Rescue Services
HOCHI	Historic Offences Crime Harm Index
MoPI	Management of Police Information
NFIB	National Fraud Intelligence Bureau
NPCC	National Police Chiefs' Council
ONS	Office for National Statistics
PPI	Proactive Policing Index

4. Introduction

4.1 Counting Crime in England and Wales

Counting, the process of calculating the number of 'things' is usually a simple process of summing each individual unit within a defined group to calculate the total number [of 'things']. In relation to policing, it is possible to count crime this way; this is how it is mainly done, but is this the only way or indeed the right way?

The current practice for reporting crime statistics is based on pure counts of recorded crime, calculated per 1,000 resident population in a police force area, and a calculated percentage change in recorded crime compared to a previous time period – each of these statistical series are presented by offence group and also summed to present 'total recorded crime' statistics (Office for National Statistics, 2021). Such statistics are reported in the media focussing on the headline measure total recorded crime per 1,000 resident population and often presented as a league table. An example of how crime statistics are presented in the media is shown in Appendix 1. This is routinely updated as crime statistics are published by the Office for National Statistics (ONS) and used by numerous media organisations. Of concern is the title of the graphic 'Where is the most dangerous place to live?' suggesting that the total recorded crime per 1,000 resident population measure is *the* measure of public-safety. The accompanying article included the following points:

- West Yorkshire topped the list of shame, with 128 crimes per 1,000 people during the 12 months to June.
- Despite London being gripped by its worst murder toll in more than a decade that saw 146 people killed on its streets during the year, its crime figures placed it joint 11th, alongside Gwent in Wales. However, the capital had the highest number of thefts and robberies, with just under 50 offences per 1,000 people.
- Data from the ONS, revealed that some of the most crime-ridden areas of the country are Cleveland, Greater Manchester, Humberside, Lancashire, Northumbria, South Yorkshire and Durham.

- The official data showed evidence of rising lawlessness in Wild West Britain and a soaring number of crimes being reported.
- Gloucestershire, North Yorkshire and Dyfed-Powys in Wales were the safest with 56 offences per 1,000 people.

(Daily Mail, 2020)

The example of how crime statistics are reported in the media provided here, based on the headline ‘total recorded crime’ per 1,000 resident population measure, thus treating all types of crime equally is misleading (Sherman, 2020). Particularly where language such as ‘”list of shame”, “most crime-ridden” and “safest” is used to emphasise the point. The current method can show a decrease in (total) crime suggesting a decrease of harm within the community, or that the area is ‘less dangerous’ even if the number of murders increased by 10,000 percent off-set by the level of a higher volume offence type such as theft halving during the same period (Sherman, 2020). The practice of weighting crimes is discussed in the literature review section, however it must be accepted that the current method of counting and reporting crime statistics does not provide a reliable measure of harm caused by crime (Sherman, 2020).

In addition, the current practice suggests that every crime recorded is ‘bad’ and contributes negatively to the level of public-safety. The inclusion of crimes within the ‘total recorded crime’ measure that are: proactively identified by police and are in fact making communities safer; identified by companies/other organisations; or were committed in prior years to that reported distort the current level of public-safety. The current method does not reflect police practices and strategies, such as the level of proactive policing undertaken, thus potentially encouraging perverse behaviours by creating disincentives for the police to make communities safer (Sherman, 2020).

Legitimacy, the concept of following set rules and being fair and honest (Cambridge Dictionary, n.d. a) is well-established in policing, particularly ‘audience legitimacy’; the legitimacy of how policing is viewed/perceived by those who are served by the police (Bottoms and Tankebe,

2013). As part of the PEEL (Police Effectiveness, Efficiency and Legitimacy) assessment of police forces by Her Majesty's Inspectorate of Constabulary and Fire & Rescue Services (HMICFRS), the inspectorate assess whether "police forces of England and Wales are good at treating all the people they serve with fairness and respect" as part of the legitimacy pillar (HMICFRS, 2017). Similarly, public-confidence in policing is gained through treating the public with dignity and respect (Jackson and Sunshine, 2006). Publishing crime statistics that supposedly inform the public about their level of safety, which are misleading, is at odds with being respectful to those whom policing serve. Therefore, counting, and the way crime is counted and reported in crime statistics is important. The method of counting crime outlined in the Cambridge Consensus Statement is said to provide the public with a "reliable and realistic assessment of trends, patterns and differences in public-safety" (Sherman, 2020). The methodology also provides the police service with insight to support it to better manage demand with a clear focus on concentrating on reducing harm rather than counts of crime (Sherman, 2020).

4.2 Cambridge Consensus Statement

'How to Count Crime: the Cambridge Harm Index Consensus' was published in 2020 providing a blueprint for how crime statistics should be calculated and reported. (Sherman, 2020). Within the Cambridge Consensus Statement, a strong statement is made:

> "Crime statistics require a radical transformation if they are to provide transparent information for the general public, as well as police operational decision-making"
>
> (Sherman, 2020 p.1)

As evidenced in the review of literature, weighting crime counts is not a new concept. Whilst individual police forces in England and Wales will use weighting to provide insight internally, unlike in some other countries, there is not a 'standard' Crime Harm Index (CHI) that is published and accessible to the public (Sherman, 2020). Whilst not counting each individual crime as an equal entity, those countries that have adopted a 'national CHI' have not developed a

methodology that accounts for the nuances regarding whether each crime recorded has a negative impact on the measure of public-safety (Sherman, 2020). Nor has any country developed a methodology of measuring policing activity (detections) based on harm rather than pure counts (Sherman, 2020). The blueprint set out in the Cambridge Consensus Statement is endorsed by a subset of academic staff, occasional lecturers and consultants of the Cambridge Police Executive Programme or the Cambridge Centre for Evidence-Based Policing; signatories providing support of the blueprint include a number of criminologists and former Chief Constables from police forces in England and Wales (Sherman, 2020).

The methodology of counting crime and police activity as outlined by the Cambridge Consensus Statement is a potential transformation in reporting crime statistics; in addition to applying a harm weight, the methodology separates crimes not reported by the public, counting crimes identified by proactive policing and by companies or other organisations as distinct statistical series, and separating crimes committed in previous years, to provide the public with a more reliable indicator of the current level of public-safety (Sherman, 2020). Of particular note is the use of the word 'indicator', implying that the resulting statistics are indicative of the current level of public-safety rather than an exact science. The Cambridge Consensus Statement recommends that rearranging existing statistics into seven statistical series provides information that is more informative to the public and more useful to the police (Sherman, 2020). The seven statistical series are:

- A Crime Harm Index (CHI): A count of crime cases reported by victims and witnesses that were committed in the year reported weighted by a CHI.
- A crime count by all crime categories: Continuation of counting pure counts but only presented within the offence group that the crime case belongs; no total crime figure or rate should be used. The main difference to the current method is that this series also relates only to crimes reported by victims and witnesses that were committed in the year reported.

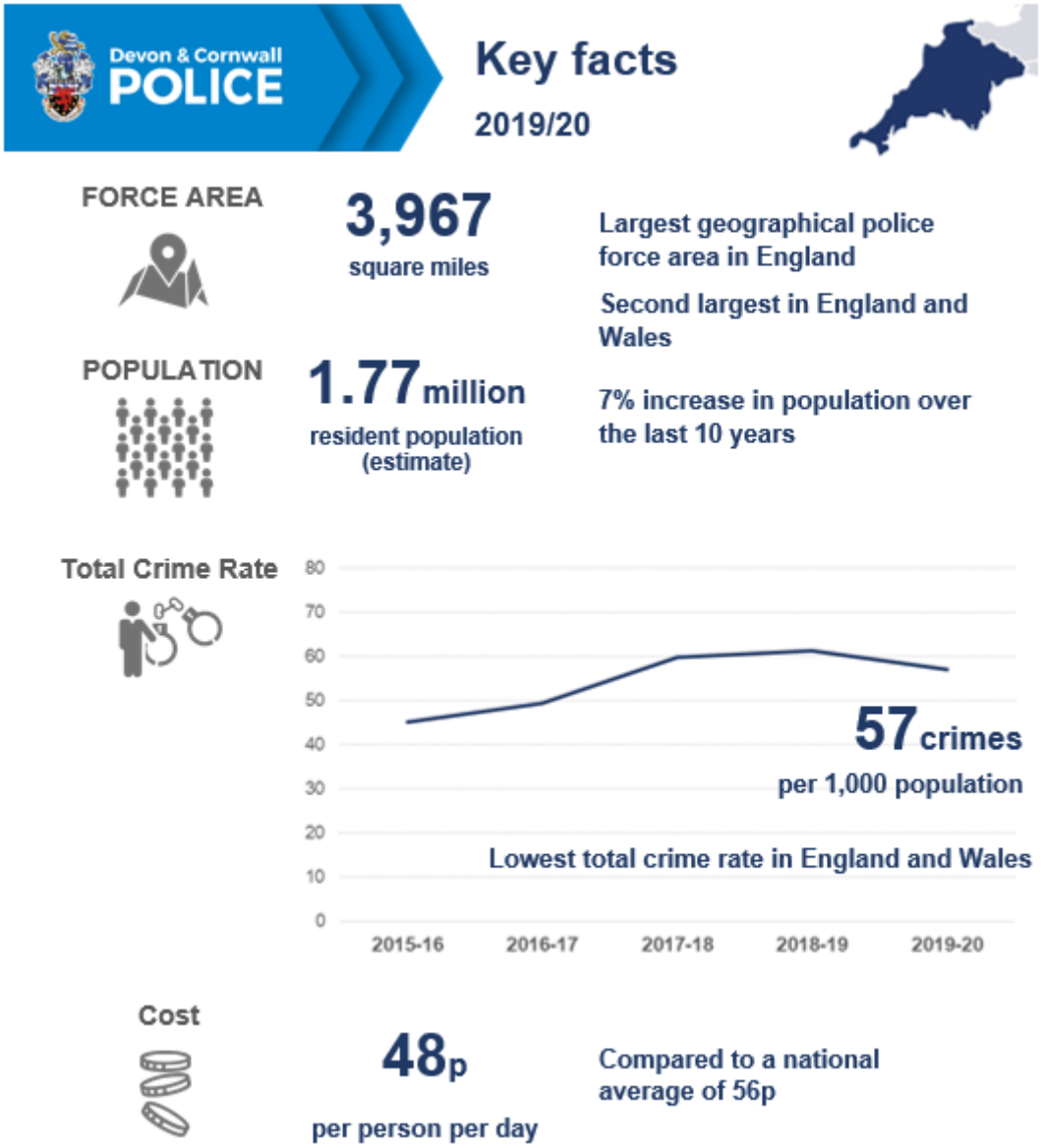
- A Historic Offences Crime Harm Index (HOCHI): A count of crimes weighted by a CHI reported by victims and witnesses but committed in previous year(s) to that reported. Such crimes should be counted separately to not mislead levels of *current* public-safety.
- A Proactive Policing Index (PPI): A count of crimes weighted by a CHI that are, in the majority of cases, identified by the police. Such crimes do not reflect the level of public-safety.
- A Company-Detected Crime Harm Index (CDCHI): A count of crimes weighted by a CHI that are identified by companies and other organisations. Again, such crimes do not reflect the level of public-safety.
- A Harm Detection Fraction of total CHI (HDF): To reflect overall performance in 'detecting' crime but focussed on harm rather than volumes and focussed on crimes that are reported by victims and witnesses; this ensures that the statistic is not skewed by the high 'detection-rate' in relation to crimes identified through proactive policing. A count of crime 'detections' reported by victims and witnesses weighted by a CHI divided by the count, weighted by a CHI, of crime reported by victims and witnesses in the same time period.
- Detection-rates per 100 by all crime categories: Detection-rates as per the current methodology, based on counts, but only presented within the offence group that the crime case belongs.

(Sherman, 2020)

This research looks to build on the blueprint outlined by the Cambridge Consensus Statement by developing and applying the methodology to crime data recorded by Devon and Cornwall Police to illustrate whether the findings do differ from the current method of counting crime. This research will focus on the 'new' statistical series recommended by the Cambridge Consensus Statement, namely the CHI, HOCHI, PPI, CDCHI and HDF. The aim is to provide a 'proof of concept' and an evidence-base to assist and progress the needed discussions on how best to count crime.

4.3 Context

The graphic below provides a high-level overview of Devon and Cornwall Police.



Of particular note is the total crime rate, the lowest in England and Wales. But does this mean that Devon and Cornwall was the safest place to live? This applications aims to show whether the methodology recommended by the Cambridge Consensus Statement could provide a different view-point.

4.4 Research Structure

The research aims to answer the over-arching key research question:

> Compared to the current method of counting, how does the crime and policing statistical profile for Devon and Cornwall, during 2015-20, differ when the method described in the Cambridge Consensus Statement is applied?

In order to provide an answer to the key research question, this research will look to answer the following sub-questions:

a) How different is the trend in annual crime count from the trend in annual total Cambridge Crime Harm Index (CHI) for victim- and witness-reported crimes that occurred in each year?
b) What is the trend in the Historic Offences Crime Harm Index (HOCHI) reported each year for cases that occurred in prior years?
c) What offences in Devon and Cornwall can be identified as proactively detected in 100% or in a high proportion of cases, and what proportion of cases arguably belong in a Proactive Policing Index (PPI).
d) To what extent does the removal of the cases (identified in c.) change the CHI and crime count totals? Is the PPI consistent on a year-on-year basis or highly variable?
e) How can company-detected crimes be identified within the existing crime records systems, and what proportion of crime count and CHI is extracted from the total in creating a Company-Detected Crime Harm Index (CDCHI)?
f) How does the standard detection-rate for all offences change if those offences are weighted by CHI scores to create a Harm Detection Fraction (HDF)?
g) If the NPCC (National Police Chiefs' Council) were to consider endorsement of the creation of a parallel statistical series based on the method detailed in the Cambridge Consensus Statement, what would be the major definitional and methodological or data processing issues to be addressed?

The research findings that follow include a targeted literature review to provide the context and background to the requirement for change. This review examines the existing evidence-base in relation to weighting crime to measure harm/severity rather than relying on crime counts. The literature review will bring together various methodologies and draw out learning from the application of different methodologies. The following methods chapter details the processes undertaken to develop and apply the methodology outlined by the Cambridge Consensus Statement. This includes presenting the planned analytical methods in order to answer the aforementioned sub-questions a) - f) as well as detailing the data sources, data specification/requirements and the data processing undertaken to develop and apply the blueprint; the detail provided should support any force, regardless of their record management system, to replicate this application. The results chapter will present and describe the statistical series in order and under the heading of each of the sub-questions a) - f). The final chapter of the research element of this thesis discusses the findings. This chapter also aims to answer the final sub-question in relation to learning gained from the application of the methodology and discuss the policy implications that this research can, and hopefully will, have. The discussion will also identify any risks or negative consequences that can be planned for and mitigated where required. All the research will then be drawn together and conclude by providing an answer to the key research question.

5. Literature Review

This chapter is a targeted review of literature to provide the context and background to the requirement for change and the methodology described in the Cambridge Consensus Statement. The review will be structured under the themes:

- Measuring harm

  This section reviews the literature regarding the need to weight crime statistics accounting for the seriousness of the crime committed, giving greater emphasis to crimes that cause higher levels of harm afflicted to individuals or society (Ashby, 2017).

- Approaches to weighting crimes

  The various methods of weighting crimes that have been developed and adopted both in England and Wales and in policing internationally will be reviewed.

- Learning from the application of Crime Harm Indexes

  As the principle of weighting crimes has been implemented and tested, learning has been obtained. The learning from application of weighting methodologies identified in the review of literature will be outlined in this section.

This section aims to provide an evidence-base to support the blueprint outlined by the Cambridge Consensus Statement that will facilitate the required “radical transformation” in counting crime (Sherman, 2020); this thesis intends to further develop this evidence-base by applying the methodology to crime data recorded by Devon and Cornwall Police.

5.1 Measuring Harm

Why should policing create a CHI? In principle, this can be answered by comparing policing statistics to measures used in a business context. A company would measure the number of sales transactions within a time period, akin to police services measuring the number of crimes recorded. More importantly, companies are interested in the ‘bottom line’, net profit. To ascertain

the bottom line, the turnover requires calculating which equates to the count of sales transactions multiplied (weighted) by the price each item sold for (Sherman et al., 2016). An Index applies a weight, a level of importance given to something compared to something else (Cambridge Dictionary, n.d. b), to each unit. Creating a CHI allows policing to understand the 'bottom line' of harm caused by crime, thus influencing policy decisions particularly in relation to the utilisation and targeting of scarce resources (Sherman et al., 2016). In relation to the public's perception, when it is reported that crime (rates) have increased or decreased, they will interpret that as a change in their safety and likelihood of suffering harm resulting from crime; instead of measuring and reporting how much crime is in an area, a more appropriate question is how much *harm* is caused by crime (Ratcliffe, 2015).

Harm is a policing priority. 'We detect and prevent harm; protect the vulnerable and reduce crime' is an element of the current mission for Devon and Cornwall Police. As with other police services in England and Wales, this is a move away from the more traditional priorities of tackling or reducing crime. The future of policing as set by the 'Policing Vision 2025', developed by the Association of Police and Crime Commissioners (APCC) and NPCC, cites the public expectation for the police service to protect them from harm as one of the reasons why policing needs to change (NPCC, 2016). This change in emphasis is as a result of police services reassessing their focus on traditional volume crime counts during the recent period of austerity and identifying new priorities focussing on harm reduction (Sherman et al., 2016; Neyroud, 2015). Austerity, since the 2008 financial crisis, has required public-sector organisations (including policing) to operate with reduced budgets and therefore substantially reduced resourcing to meet demand. In England and Wales, the number of police officers reduced year-on-year since 2010; in 2017, the number of police officers relative to the population was at its lowest level since 1975 (Ashby, 2017). To ensure policing is effective and efficient, knowledge of evidenced-based practices is required to make optimal use of scarce resources under increasing demands (Sherman, 2007). Evidence-based practice provides a solution to reducing resources by focussing on (targeting) the victims,

offenders and places that are associated with the highest harm in any distribution of events (Sherman, 2007). To measure harm reduction, a measure for harm is required.

The requirement to change how crime is counted is the rationale upon which Cambridge Crime Harm Index is based; the principle that different crime types are not equal in terms of the harm caused and their severity, and thus should not be treated and counted as equals (Sherman, 2007; Sherman, 2013). Sherman (2007) identifies the need for a true crime index to measure harm and severity based on the crime classification, so that "a homicide be counted as more harmful to the community than a shoplifting arrest, and that a rape be counted as more harmful than a car theft" (Sherman, 2007 p.312). This is not a new concept within the field of criminology. There is a relatively long tradition of applying a weight to crimes (Ignatans and Pease, 2015). However, weighting to reflect the true harm caused by crime is difficult due to the different forms of harm in terms of financial or emotional impact and the individualistic impact; the same event may have varying impacts on different people (Ashby, 2017). There are numerous ways in which crime counts could be weighted that aim to reflect the level of harm caused, none of which are likely to be perfect due to the individualistic impact of harm; however, the benefits of weighting crime counts to prioritise resources rather than by pure counts is evident in the literature and by the successful adoption within policing and academia in England and Wales and, more notably, internationally (Ashby, 2017; Sherman, 2020).

What makes a good methodology for weighting crime to measure harm? Sherman et al. (2016) provides three tests that a methodology must pass before it can be considered to be adopted as standard practice. The tests, considered as 'essential criteria' are:

- The 'democracy test': "Does the metric reflect the resolution of conflicting viewpoints by a process adopted by a democratic government reflecting the will of the people?"
- The 'reliability test': "Does the metric provide a reliable measure that can be consistently applied to each unit of analysis (time, place, people) with the same results for the same levels of harm?"

- The ‘cost test’: “Is the metric readily available at virtually no cost to be adopted without any new budgetary appropriation?”

(Sherman et al., 2016 p.174)

Any methodological approach can be, and has been in most cases where developed, evaluated against these tests.

5.2 Approaches to Weighting Crimes

This section outlines the different approaches to measuring harm caused as a result of a crime being committed. Different approaches use different nomenclature, using the terms ‘harm’, ‘seriousness’ and ‘severity’; each approach aims to provide a measure for the gravity and the impact the crime has on the victim or community, therefore in the following sections, the three terms will be treated as meaning the same.

There is substantial evidence in the review of literature that there is an accepted requirement for a weighted measure of crime to reflect harm/severity/seriousness. The first examples of constructing indexes to differentiate and measure crime severity include, Sellin and Wolfgang (1964), Rossi et al. (1974) and Wolfgang et al. (1985) which weighted crimes based on panel ratings and public opinion (Ignatans and Pease, 2015; Sherman et al., 2016). Sellin first suggested the potential for the societal significance of an offence to be a measure of severity in the 1930’s, but implementation at the time proved problematic (Clark, 1967). It wasn’t until many years later that Sellin, alongside Wolfgang, undertook the research project to produce a ‘sociologically sensitive index’ in relation to juvenile delinquency that aimed to measure the ‘total event’ (Clark, 1967) based on public surveys undertaken by the public in Philadelphia USA in 1960. In reviewing the research, Clark (1967) questions the ability to apply the resulting ‘delinquency index’ due to the “demands of the index” (Clark, 1967) and the likelihood of the required data being kept or gathered by the police. The practice of basing a weight that is based on the opinion of the public continues in more recent years.

In England and Wales, respondents to the Crime Survey for England and Wales (CSEW) are asked about crimes they have been the victim of (whether reported or not) and invited to provide an assessment of the seriousness of the crime (Ignatans and Pease, 2015). The assessment of seriousness is based on their response to the question *How serious a crime [do] you [the victim] personally think this was?* The assessment is based on a scale of 1-20, with 1 relating to a minor crime like theft of milk bottles from a doorstep, to 20 being the most serious crime of murder (Ignatans and Pease, 2015; CSEW, 2019). This approach means that the seriousness, as perceived by the victim, is the basis for the measurement of harm caused; it is not a one size fits all approach where a weighting is applied to the counts of all offences within offence types (Ignatans and Pease, 2015). Ignatans and Pease (2015) argue the victim's judgement of seriousness provides a promising starting point for weighting crime statistics as the victim is best placed to evaluate the impact the crime has had on them. However their argument is counter-balanced as they also acknowledge the limitations of this approach; it does not account for: crimes against businesses; crimes against child victims; 'victimless' crimes against society; and Homicide (Ignatans and Pease, 2015). Acknowledging the limitations of the methodology, the authors conclude that "the perfect is the enemy of the good" and that there are instances where the seriousness judgement collated by the CSEW is not appropriate and other weighting approaches provide a "valuable improvement" over pure crime counts (Ignatans and Pease, 2015). In addition, when considering different ways to measure the severity of crime, the ONS deemed that the data obtained through the CSEW in relation to the public's perception as not being an appropriate measure due to the lack of sufficiently detailed data (ONS, 2016).

The ONS do acknowledge that the existing presentation of crime statistics in England and Wales that focus on crime counts and rates per 1,000 population, even when disaggregated to high-level offence groups/categories, does not take into account the different levels of severity/harm that exists within these broad groups (ONS, 2016). In 2011, a National Statistician's Review of Crime Statistics in England and Wales recommended the development of a crime weighting

method to measure the severity level in relation to recorded crime (ONS, 2016). This recommendation resonates with the point raised by Sherman (2007) when discussing how experimental criminology is finding evidence-based practices to reduce harm associated with crime; a solution based on focussing on 'the power few', the small percentage of places, victims, offenders or other units who/that account for the greatest level of harm (Sherman, 2007). To focus on harm there is a requirement for a common harm-metric, more precisely an index that applies weights to each offence type (Sherman, 2007). This need was the basis for developing the Cambridge-CHI.

The Cambridge-CHI is based on the principle of classifying each offence type by the level of harm relative to all other offence types (Sherman et al., 2016). In terms of implementing and operationalising the Cambridge-CHI as a methodology for measuring harm, it is deemed, by the authors, to meet the necessary criteria of not being too complex to understand, too changeable over time, nor too expensive to implement (Sherman et al., 2016). For each offence type, the Cambridge-CHI applies a weight to the count of crimes recorded by the recommended number of days in prison for a first-time (no previous convictions) adult-offender based on the recommended starting-point sentence set out in the sentencing guidelines in England & Wales (Sherman 2013; Sherman et al., 2016). Sentencing provides an objective metric for measuring the seriousness of a crime due to the fact that sentencing is based on legislation set by Parliament on behalf of the public, therefore reflecting the public's perception of crime (ONS, 2016). As per the scope of the CSEW seriousness score, the original version of the Cambridge-CHI focusses on measuring harm experienced by the population of the police force area; it therefore excluded offences proactively identified by policing and crimes against organisations (Sherman et al., 2016).

The recommendation to develop an approach to weighting crime was also explored by the ONS, who, supported by a task and finish group including representation from government departments, police and academia, developed the Crime Severity Score (CSS) (ONS, 2016). The CSS aims to measure the harm caused by different offence types relative to each other with a

greater weight applied to more severe offence types (ONS, 2016). The CSS is intended as a complimentary measure to recorded crime counts, to be used mainly by 'expert analysts' to support the understanding of demands on policing in relation to crime (ONS, 2016). Whilst the Cambridge-CHI is based on the recommended starting sentence set out by the sentencing guidelines in England & Wales (Sherman 2013), the CSS uses actual sentencing data obtained from the Ministry of Justice to calculate the weighting to be applied to crime counts (ONS, 2016). More precisely the CSS metric is the mean average sentence, based on the latest five years of available sentencing data, actually given in relation to each offence type (ONS, 2016).

Any weighting applied to police recorded crime data will be affected by recording practices which have been shown, by the rolling programme of Crime Data Integrity (CDI) inspection undertaken by HMICFRS, to vary over time and between police force areas (ONS, 2016). Improvements have been made in crime recording (ONS, 2016). Devon and Cornwall Police were given an overall judgement of 'inadequate' based on the findings of the 2016 CDI inspection and a series of recommendations were made to improve crime recording; the re-inspection in 2018 recognised progress and the findings showed that the force has improved its recording accuracy significantly, awarding an overall judgement of 'good' (HMICFRS, 2018).

Other countries have progressed the concept of weighting crime counts more so than in England and Wales; the signatories endorsing the Cambridge Consensus Statement were "struck" by how many countries have developed and implemented a 'national CHI'. A level of irony exists as many of the police leaders responsible for implementing a 'national CHI' first discussed the concept at the University of Cambridge (Sherman, 2020).

- Andersen and Mueller-Johnson (2018) researched whether the Danish Police could create a metric, similar to the Cambridge-CHI, to measure total harm associated with all victim reported crime. In Denmark, the total crime count is used and assessed as the "dominant method of establishing whether crime has gone up or down". The resulting Danish-CHI is based on the prosecutor guidelines that specify the sentence a prosecutor should ask for in

court for a first-time adult offender who is charged with a crime with no aggravating factors (Andersen and Mueller-Johnson 2018).

- Kärrholm et al. (2020) looked to develop a CHI for Sweden using criminal justice sources to provide a measure for harm across different offence types. Similar to Denmark, in Sweden there are no sentencing guidelines on which to base a CHI; after evaluating alternative measures Kärrholm et al. (2020) evaluated that the average sentence actually handed down by offence type provided the greatest reliability for a Swedish-CHI.
- In Western Australia, House and Neyroud (2018) evaluated a number of methods to develop a measure of harm for the one hundred most harmful and frequently recorded offence types: sentencing guidelines as per the Cambridge-CHI; maximum sentences; actual court sentences as per the ONS CSS; first-time offender sentences; and the use of surveys undertaken by the judiciary. In the absence of sentencing guidelines, reliability concerns with the maximum sentences due to the lack of variation in values, actual court sentences being skewed by offender's previous convictions, and time constraints in undertaking their research meaning that surveying the judiciary was not feasible, House and Neyroud (2018) developed a CHI for Western Australia based on the median sentence passed to first-time offenders.

Other examples include the CA-CHI in California based on the maximum sentence an offender can receive (Mitchell, 2017); the NZ-CHI in New Zealand based on the minimum sentence for a first-time offender based on actual sentencing data (Curtis-Ham and Walton, 2017); and the Crime Severity Index in Canada, developed by Statistics Canada, first published in 2009, which weights crime counts by average sentences handed down (Statista, 2021).

5.3 Learning from Application

Within the literature reviewed regarding the development of a CHI, the authors reference the practical benefits weighting crime counts facilitate. These include the ability to focus on harm as a priority rather than 'traditional' crimes, targeting resources to where they can have the greatest

impact; using the principles of evidence-based practice to focus on offenders who cause the most harm, victims who suffer the highest harm, and places where most harm occurs (Sherman, 2013). The concept of the 'power few', the small percentage of units, for example offenders, victims or places, attributable for the greatest amount of harm (Sherman, 2007) has been demonstrated in a number of police forces. In one force in England and Wales, the Cambridge-CHI was applied to victim data in relation to crimes recorded during a 12 month period. This research found that 85% of the total harm-score could be attributed to less than four percent of victims (Dudfield et al., 2017). Research undertaken by Bland and Ariel (2015) used the Cambridge-CHI to dispel the assertion that there is escalation in reported domestic abuse. The research also found that 80% of the total harm-score could be attributed to less than two percent of the dyads, and of the dyads responsible/suffering the highest harm, more than half had no prior contact with the police in relation to domestic abuse. This research recommended that data from other agencies (than the police) might be better placed to support the prediction of high-harm caused by domestic abuse (Bland and Ariel, 2015). Findings such as these support evidence-based practice in policing to identify how to best target resources.

As the application of a CHI has been well evidenced within the literature reviewed and referenced thus far, this section will now focus on distilling the evidence in relation to two key questions:

1) Which method of weighting should be used in England and Wales?
2) How can the methodology of weighting crime counts be improved?

The review of literature has shown that there are numerous nuances in the different approaches undertaken to weighting crime counts using sentencing information, sometimes the choice of methodology is restricted due to data availability. There are two different methodologies available in England and Wales, the Cambridge-CHI and the ONS CSS; but which should be used for weighting crime counts to reflect severity? When applied to crime statistics, the two weighting measures produce substantially differing results thus would impact decision-making made based on the results (Ashby, 2017). If all offenders were sentenced as per the recommended starting-

point of the sentencing guidelines, the two methods would provide the same results. However, this is not the case. Actual sentences given are higher than the starting-point where there are aggravating factors present including, but not limited to, the offender's previous criminal record or whether the offence was racially motivated (Sherman, 2020; Ashby, 2017). Conversely, sentences can be reduced and 'discounts' applied for guilty pleas, particularly when offenders plead guilty at the 'first reasonable opportunity' thereby entitling them to a one-third discount to the sentence (Ashby, 2017). In comparing the results of applying the two methods of weighting 2015/16 crime counts recorded by police in England and Wales, Ashby (2017) found a number of key differences in the results:

- There are a substantial differences in the proportion of the total weighted count that each offence group contributes. Rape accounts for 37.0% of the total Cambridge-CHI compared to 20.1% of the total CSS. Conversely, offences of Residential burglary are more heavily weighted by the CSS resulting in the offence group accounting for 16.1% of the total CSS and only 2.1% of the total Cambridge-CHI (Ashby, 2017).
- In terms of the weighted total crime measure per 1,000 population, the two methods result in a differing ranked order of police force areas. Using the Cambridge-CHI, Devon and Cornwall Police force area had a total estimated harm 'score' of 2,454 per 1,000 population; relative to other police force areas in England and Wales, it is inferred that Devon and Cornwall Police force area has the thirteenth lowest level of crime harm/severity. The CSS produced a similar score for Devon and Cornwall, 2,425; however, relative to other police force areas, it is inferred that Devon and Cornwall has the third lowest level of crime harm/severity (Ashby, 2017).

Ashby (2017) concludes that neither the Cambridge-CHI nor the ONS CSS are perfect and have different weaknesses. A common weakness is that both methods, as any based on sentencing information, do not reflect the individualistic nature of harm caused to different individuals who are victims of exactly the same crime (Ashby, 2017). Ashby (2017) identifies the weaknesses of the CSS include the high level aggregate offence category that weightings are available for,

therefore not distinguishing between the substantially varying levels of harm associated with the offences contained within these categories. The other weakness that Ashby (2017) identifies relates to the issue of the weightings being skewed by other factors taken into account when sentences are determined, thus providing a level of support for the original case made by Sherman (2013) for using the recommended starting sentence. The argument for basing the weight on the starting sentence is that it provides "an approximation of the 'pure' weight of harm of the offence itself" (Sherman, 2013); it is not offender focussed thus skewed by reduced sentences for early guilty pleas or increased sentences due to the presence of aggravating factors (Sherman, 2016; Ashby, 2017). This point is exemplified by Sherman (2016), the impact of a murder on the victim and their family is the same whether the offence was committed by a first-time offender or by a serial killer and therefore the weight should be the same, which would not be the case if the average sentence imposed was used as the basis.

An identified 'gap' in the Cambridge-CHI is that it does not presently include all offence types, particularly where sentencing guidelines are not available. Whilst outlining the imperfections, Ashby (2017) supports the principle of weighting crime counts and acknowledges that analyses using such methodologies are being positively received in policing. However, Ashby (2017) leaves the question open as to which is the best measure for weighting crime counts in England and Wales; the final conclusion is that one will likely prove more useful than the other as they develop. In the meantime, the substantial differences in the results and therefore the potential impact on decision-making, means that users should exercise caution when selecting a metric (Ashby, 2017). Whilst the comparison has identified areas in how they could be improved, what lessons have been learnt, in terms of scope, from the application of a weighting methodology?

- In developing the Danish CHI, Andersen and Mueller-Johnson (2018) followed the same methodology in terms of scope as the Cambridge-CHI and focussed only on crimes reported by victims and witnesses, excluding offences that were 'police generated' through enforcement. Whilst agreeing with the rationale, to provide a reliable measure of harm to victims and society (Sherman et al., 2016), the authors felt that excluding crimes including

possession of stolen goods, narcotics possession and smuggling, becomes problematic when using the Danish CHI for targeting purposes. To fill this gap, it was proposed that an appendix for 'police initiated offences' should be created following the same methodology than the CHI (Andersen and Mueller-Johnson, 2018).

- When House and Neyroud (2018) applied the Western Australian CHI to crime data over a five-year period they note the influence that increasing reporting of historical sexual offences had on the overall harm-score. They are high-harm and a high CHI weight associated. The authors concluded that the inclusion of historic sexual offences would distort the understanding by both the public and the police as to the current level of public-safety. This is a global issue in crime statistics and not just limited to Western Australia. Therefore the authors suggest the separation of historical offences from contemporaneously reported (same year) offences so to provide a measurement of harm for the year in which the offence was committed and the harm occurred (House and Neyroud, 2018).
- In introducing the development of a CHI for Swedish police crime data, Kärrholm et al. (2020) discuss the principle that different crime types are not equal in terms of the harm caused and their severity and thus should not be treated and counted as such (Sherman, 2007; Sherman, 2013) but relate it to how a detection-rate is calculated. Although it was out of scope for the research, Kärrholm et al. (2020) identify a potential new application for a CHI.

The literature review has evidenced the value of having a metric for harm and moving away from crime counts. The identified opportunities for development have been incorporated by the Cambridge Consensus Statement methodology; this research tests it in a real-world application.

6. Methods

This chapter details the methodology adopted in order to answer the key research question:

> Compared to the current method of counting, how does the crime and policing statistical profile for Devon and Cornwall, during 2015-20, differ when the method described in the Cambridge Consensus Statement is applied?

As outlined in the introduction, to answer the key research question a number of sub-questions are posed. The methodology adopted aims to facilitate the ability to provide an answer to these sub-questions. The chapter describes the research design and then details the data requirements and data processing undertaken; it concludes by outlining the analytical methods required. This chapter takes the blueprint provided by the Cambridge Consensus Statement and provides a set of instructions and principles so that the methodology could, accepting that there will be differences in recording systems, be replicated by another police service.

6.1 Research Design

This research applies the recommended methodology for counting crime and policing described in the Cambridge Consensus Statement to pre-existing data held by Devon and Cornwall Police in relation to recorded crime cases and crime outcomes (detections). Therefore, this research can be described as an application that demonstrates and tests the recommended methodology for counting crime and policing, providing a ‘proof of concept’ of the blueprint. Figure 1 illustrates the high-level steps required to undertake this research. The steps are described in more detail in subsequent sections of this chapter.

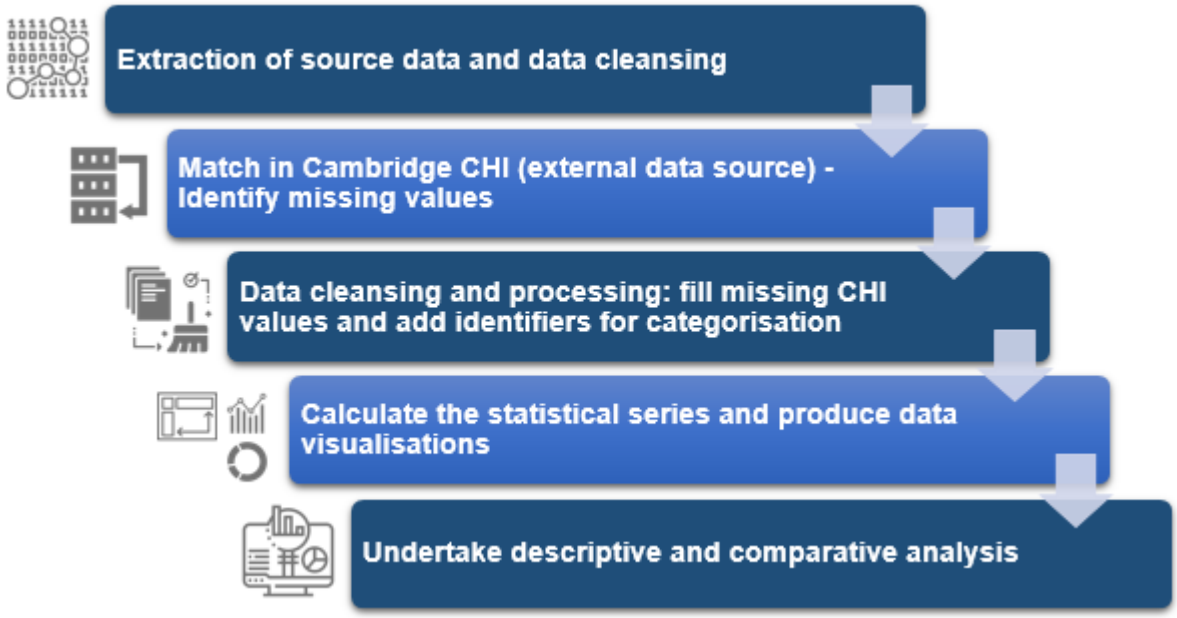


Figure 1: High-level research design process

Descriptive analysis will be undertaken to describe the statistical series facilitating comparative analyses against the current method of counting crime and detections; the aim is to assess whether, and how, the recommended counting method yields different results to just pure counts. This will be undertaken by charting the statistical series relevant for each sub-question and comparing the results when the statistical series is weighted by the Cambridge-CHI to pure counts. By describing the trends, it will be possible to identify the differences (if any) and therefore the impact of weighting as well as describing the impact of separating total crime by the recommended categories as per the blueprint set out by the Cambridge Consensus Statement.

6.2 Data

The data requirements and data processes applied to enable the categorisation of each crime case to the relevant statistical series are detailed in this section. It will outline the specification for extracting the data from the Devon and Cornwall Police records management system and the data processing required to enable the calculation of the statistical series. The section concludes by outlining the analytical methods with particular focus on how each statistical series will be calculated.

6.2.1 Data Sources

The required police data is held within the Force's crime record management system (UNIFI). The data can be extracted from source using a Business Intelligence tool (QlikView) that is directly linked to a data-warehouse; this enables self-service to the required data using existing management information reports. The data are held as part of the requirements under Management of Police Information (MoPI) principles, which states that information with a policing purpose needs to be kept whilst balancing proportionality and necessity (College of Policing, 2019). The data requirements are limited to non-personal information, therefore neither the Data Protection Act 2018 nor the College of Policing Authorised Professional Practice regarding information sharing apply (College of Policing, 2020). Data will be held on the Force network which provides high level security.

This research looks to compare whether and how policing statistics differ when based on pure counts and when weighted by a CHI; therefore requiring the application of a CHI, this study will use the Cambridge-CHI for the reasons outlined in the literature review chapter. The Cambridge-CHI look-up table (external data source) was updated in May 2020 and contains a harm index score for 698 individual offence types and is available at the following URL: https://www.cambridge-ebp.co.uk/crime-harm-index

6.2.2 Data Specification

The data specification provides the exact requirements applied to extract the data from source to enable the calculation of the statistical series.

> Unit of analysis: An individual crime record relating to an offence that is classed as notifiable (to the Home Office) so to be comparable to current methods of counting and reporting crime and detections/outcomes statistics, where the date that the crime or outcome was recorded is within the defined time parameters.

The analysis is based on crimes recorded by Devon and Cornwall Police during the most recent five performance years: 01/04/2015-31/03/2019 (n=471,496) and crime cases where an offender outcome (detection) was recorded during the same time period (n=87,411). Basing the analysis over five years will provide sufficient trend data to chart, facilitating descriptive and comparative analysis. It is important to emphasise that the data in relation to offender outcomes are based on the date that it was achieved/recorded, the crime case it relates to could have been recorded outside of the five-year period; in this data-set, as far back as the early 1990s.

Due to the number of data sources and variables required, the data specification is presented in tabular format (Appendix). Each table specifies the data variables required to be extracted and managed. The tables provide the data source and any filters required to ensure that the data extracted meets the requirements for the calculations. The required variables are listed alongside a brief description and rationale for their inclusion in the data extracts. The analysis will be based on charts produced based on the results of calculating each statistical series; Microsoft Excel will be used for data processing, calculation and data visualisation steps of this research, therefore data files will be in a compatible format and managed using the principles of good data management.

Three internal data-sets are required to be extracted to facilitate this research:

- The first data-set relates to recorded crime case data for the five-year period. Key points in relation to the extraction of this data-set is that it includes only crimes that are classed as notifiable (to the Home Office) and excludes crimes that have been cancelled (no-crimes), thus replicating the data that the ONS report on. Due to the quantity of data and to ease data processing, data for each of the five-years will be extracted and managed separately. Appendix 2 provides the detailed data specification for this data-set including a list and rationale of all variables extracted.

- The second data-set relates to crime outcomes recorded during the five-year period. Other than this data-set being filtered on the [Crime Disposal Date] variable, the specification is very close to that for the recorded crime case data. Appendix 3 provides the detailed data specification. Not all the variables detailed for the crime outcomes data-set are required in order to provide the calculations in order to answer the research sub-questions. However, they are included to produce a further level of insight, for example, to focus on only crimes reported in-year committed and/or only crimes with a high harm-score.
- The third data-set is an extract of all unique case reference numbers for crimes where the victim is recorded as an organisation. This is required to match into the recorded crime case data extract and the crime outcomes data extract to enable the identification of cases that should be counted in the CDCHI statistical series and excludes from the calculation of the HDF. As such, this data-set will include crimes recorded since 1991 (earliest data available) and requires splitting into separate downloads to ensure that data processing is manageable. Appendix 4 provides the detailed data specification.

In relation to crime outcomes, it is necessary to clarify the definition of a ‘detected’ crime. The outcomes framework defines ‘offender outcomes’ (detections) as crimes that result in one of the following outcomes being assigned:

Outcome Code	Outcome
1	Charge/summons
2	Caution – youths
3	Caution – adults
4	Taken into consideration (TIC)
5	Penalty Notice for disorder
7	Cannabis Warning
8	Community Resolution

(Home Office, 2020)

Devon and Cornwall has developed and adopted a diversionary scheme (Pathfinder) for offenders as an alternative to criminal justice and official ‘offender outcomes’. Crimes resulting in

the perpetrator successfully completing the Pathfinder scheme were recorded as outcome code 8: 'Community Resolution' until the introduction in April 2019 outcome 22: 'Diversionary, educational or intervention activity, resulting from the crime report, has been undertaken and it is not in the public interest to take any further action' (Home Office, 2020). Therefore, in Devon and Cornwall, outcome code 22 is included within the performance measure for 'offender outcomes (plus)' so as to not encourage perverse behaviours in the pursuit of performance and to measure policing activity consistently over time. This research will adhere to this same convention even though it is not consistent with current Home Office guidance.

The data-set required is the (external) Cambridge-CHI look-up table to facilitate the reading in of the respective harm scores. Appendix 5 provides the detailed data specification relating to the look-up table.

This section has detailed the specification for the data extraction. Before it is possible to use this data to make the calculations required, the data needs to be processed to transform it to a data-set on which the calculations can be based.

6.2.3 Data Processing

This section will outline the processes undertaken to cleanse the data, create variables required to facilitate identifying to which statistical series the crime case belongs, and matching in the external data (Cambridge-CHI) to construct a master data-set on which the calculations can be based.

Crime Categorisation

From the year ending June 2017, the categorisation of crimes was amended so that offences of Stalking and harassment and Death or serious injury caused by illegal driving offences were removed from the Violence with and without injury sub-categories respectively, now forming separate sub-categories within the Violence against the person offence group (Home Office,

2021). For consistency and comparability, in the data extract for recorded crime cases and crime outcomes, crimes recorded prior to this change were re-categorised to reflect the current counting rules; these changes apply to offences [Offence Description] listed in Tables 1 and 2.

Table 1: Offences re-categorised to [ONS Sub Group]: Death or serious injury caused by unlawful driving

Code	Offence [Offence Description]
4/4	Causing death or Serious Injury by dangerous driving
4/6	Causing death by careless driving under influence of drink or drugs
4/8	Causing death by careless or inconsiderate driving
4/9	Causing death or Serious Injury by driving: unlicensed drivers etc.

Table 2: Offences re-categorised to [ONS Sub Group]: Stalking and harassment

Code	Offence [Offence Description]
8L	Harassment
8M	Racially or religiously aggravated harassment
8Q	Stalking
8R	Malicious communications
8U	Controlling or Coercive Behaviour

Historic Offences Variable:

An identifier-variable is required to highlight crimes that were committed in previous years to when the crime was reported. Such offences are recommended by the Cambridge Consensus Statement to be counted separately to all victim and witness reported crimes so as to provide a measure of demand (workloads) without confusing the public about current levels of safety in their community (Sherman, 2020 p.5). In the data extract for recorded crime cases and crime outcomes, variables were added to translate the [Entered Date] and [Date Committed To] variables to reflect the relevant performance year. An IF function calculated whether these two year variables were equal and therefore the crime case was committed in the same performance year as it was recorded; an [In-Year] identifier-variable was added if the IF function result was TRUE. Where the IF function returned a result of FALSE, a [Previous] identifier-variable was added. The IF function is detailed in Table 3.

Table 3: Additional calculated variables to identify historic offences

Calculated Variable	Data Description and Reason for Calculation
[Entered Date Year]	Date of recording crime case (Date - Year) - To identify the reporting period of the crime
[Date Committed To Year]	End date of crime case being committed (Date - Year) - To identify the crime cases committed in-year or in previous year(s)
[Committed in Recorded Year]	=IF([Entered Date Year]= [Date Committed To Year],"In-Year","Previous") [In-Year] or [Previous]

In a small number of cases, particularly in relation to Stalking and harassment offences, the crime record had been updated resulting in the [Date Committed To] being greater than the [Entered Date]. This resulted in some cases having a [Previous] identifier added based on the process described above; such cases were manually reviewed and the identifier-variable corrected where required.

Proactive Policing Variable

Crimes discovered through proactive policing to prevent harm being suffered by the public should also be counted separately, as an output of policing rather than within the measure for current public-safety (Sherman, 2020). Ideally an identifier-variable would be at crime case level and based on a data field within UNIFI; in Devon and Cornwall, there is a [Reporting method] field with options including ‘Found by police’ and ‘Discovered by police’. However, the completion rate is not 100% and therefore unreliable to be used to identify crimes recorded as a result of proactive policing. Therefore an identifier-variable will be assigned at the offence type level.

To facilitate coding offence types that can be classed as proactively identified by police, that can be matched back to the Devon and Cornwall extracted data-sets, a master-spreadsheet containing all the unique offence types (576) included in the internal data extracts was created. The master-spreadsheet contained the following variables: [Offence Description]; [ONS Main Group]; [ONS Sub Group]; [Home Office Group]; and [Home Office Code]. A manual logic-check

of the 576 unique offence types [Offence Description] was undertaken to obtain a reduced list of *possible* offence types to be included. This process was aided by ensuring that offence types: drugs, modern slavery and human trafficking were included in the initial list as suggested by the Cambridge Consensus Statement (Sherman, 2020). Each offence type was manually checked, using the QlikView Crime Lists management information report, using 2019/20 data to ascertain if the majority (if not all) were 'Found by police' or 'Discovered by police' using the [Reporting method] field; the final list of the 192 offence types included in the proactive policing index is shown in Appendix 6. In addition to the offence types suggested by the Cambridge Consensus Statement, the list includes (but not limited to):

- Breaches or non-compliance with orders or conditions set by the police;
- Assault on a constable in the execution of duty or to resist arrest;
- Possession (only) of weapons offences;
- Receiving/handling stolen goods offences;
- Have article with intent to destroy/damage property; and
- Dangerous driving offences (excluding Death or serious injury caused by unlawful driving offences).

Crimes that result from previous proactive policing action such as breaches or non-compliance with orders or conditions are suggested to be included in this series. In addition, crimes relating to assaults on officers executing their duty are also included as such crimes are not a measure of public-safety to members of the community; if the officer were not executing their duty, the crime would not have occurred. This provides the response to the first part of research sub-question c:

c) What offences in Devon and Cornwall can be identified as proactively detected in 100% or in a high proportion of cases, and what proportion of cases arguably belong in a PPI.

An identifier-variable [Police-Detected] was added to the final list and read back to the data extracts for crime cases and outcomes using the VLOOKUP function.

Company-Detected Crime Variable

Crimes identified by companies and other organisations should also be counted separately so as not to be included in, and distort, crime statistics of public-safety (Sherman, 2020). For the company-detected crime identifier-variable, a two-stage process was adopted, firstly at offence type level and then at crime case level. Using the same master-spreadsheet, a manual logic-check of the 576 unique offence types [Offence Description] was undertaken to obtain a list of offence types that should be included; this process is required particularly for Regina offences against the state rather than directed to a specific victim (person or organisation). The aim of this series is to include crimes reported by companies and other organisations and not reported by victims and witnesses in the community nor identified through proactive policing; therefore this will include offences committed in prisons, crimes in relation to importation and exportation, and offences relating to judicial proceedings. Each offence type was manually checked, using the QlikView 'People' management information report, using 2019/20 data to ascertain if the majority (if not all) were reported by companies or other organisations. The final list of the 59 offence types included in the company-detected index is shown in Appendix 7. In addition to the aforementioned offence types, the list includes (but not limited to):

- Some fraud related offences;
- Theft by employee; and
- Shoplifting and making off without payment offences.

An identifier-variable [Company-Detected] was added to the final list and read back to the data extracts for crimes and outcomes using the VLOOKUP function.

In addition, an identifier-variable [Victim Organisation] was added to all crime cases contained in the data extract relating to crimes where the victim is recorded as an organisation. Both identifier-variables were read back to the data extracts for crime cases and outcomes using VLOOKUP functions. There are therefore two identifier-variables for company-detected offences within the data extracts which will need to be combined when carrying out the calculations.

Quality assurance checks identified a small number of Homicide, Sexual offences and Death or serious injury caused by unlawful driving offences were assigned the identifier-variable [Victim Organisation]. This data anomaly related to 43 crime cases and 3 crime outcomes; such cases were manually reviewed and the identifier-variable removed.

All crime cases and crime outcomes not assigned an identifier-variable [Classification] of either [Police-Detected] or [Company-Detected] were assigned an identifier-variable of [Victim-Based]. This can be used to identify crimes, and associated outcomes, that were reported by victims and witnesses with the exception of cases with a [Victim Organisation] identifier-variable assigned; such cases will be removed from the crime and harm series that relate to crimes reported by victims and witnesses. All three [Classification] identification-variables ('Police-Detected', 'Company-Detected' and 'Victim-Based') were merged, using CONCATENATION into one overall [Classification] field containing one of the three identifier-variables.

Detections

The Cambridge Consensus Statement recommends a new method for reporting 'detections' (offender outcomes) that focusses purely on victim and witness reported crime and adds the HDF as a complimentary statistical series. The HDF employs the same theory regarding weighting to detections as previously discussed in relation to recorded crime statistics. The data processes highlighted so far in, applied to the crime outcomes data extract, will facilitate the calculation of the detection-rates based on count and harm-score (HDF).

Cambridge Crime Harm Index

The research uses the Cambridge-CHI as a measure of harm. It applies a weighting, for each offence type, to the count of crimes recorded, and based on the number of days in prison, for a first-time offender based on the recommended starting sentencing guidelines in England & Wales (Sherman, 2013). The look-up table (openly available) contains harm scores for 698 offence

types; although 123 of these offence types relate to ‘Non-Notifiable’ crimes and NFIB (National Fraud Intelligence Bureau) offences – these are out of scope of this research.

To facilitate reading in the Cambridge-CHI scores into the Devon and Cornwall extracted datasets, the master-spreadsheet containing all the unique offence types (576) included in the internal data extracts was used. The Cambridge-CHI look-up table includes a number of reference codes for each offence type contained in the table, however the codes at the lowest (unique) level were not available in the Devon and Cornwall extracted datasets. Therefore a unique (to the offence type) primary key-variable was required in both the master-spreadsheet and the Cambridge-CHI look-up table to facilitate matching in the harm scores from the Cambridge-CHI look-up table to the Devon and Cornwall data extracts. Table 4 details the creation of the primary key-variable for both the internal and external data sources.

Table 4: Additional calculated variables to provide a primary key-variable to link the internal and external data sources

Source	Internal data-set master spreadsheet of unique offence types
Calculated Variable	**Data Description and Reason for Calculation**
[Concatenation]	=CONCATENATE([Home Office Group],” “, [Home Office Code]) Primary key variable
Source	Cambridge Crime Harm Index Look-Up Table
Calculated Variable	**Data Description and Reason for Calculation**
[Concatenation]	=CONCATENATE([CLASSIFICATION_CODE],” “, [HOME_OFFICE_CLASSIFICATION]) Primary key variable

Using the primary key-variable, the harm-score from the Cambridge-CHI look-up table can be matched into the Devon and Cornwall master-spreadsheet using the VLOOKUP function. This was successful for 370 of the 576 offence types included in all the Devon and Cornwall extracts; leaving 206 offence types without a corresponding CHI score; this could be due to the offence type not being included in the Cambridge-CHI look-up table and/or the offence codes having been updated over time, particularly in relation to crime outcomes where the offence type is

recorded as per the recording/counting rules at the time of the offence being committed. Manual checking was required to assign harm scores to the 206 offence types where a CHI score could not be assigned. This required checking the [Offence Description] variable in the Devon and Cornwall data extracts against the [FULL_OFFENCE_TITLE] variable in the Cambridge-CHI look-up table to identify offences that were the same, or similar, and therefore their score could be assigned with a degree of confidence. This was successful for 181 of the 206 offence types in the Devon and Cornwall data extracts that were not represented within the Cambridge-CHI look-up table. The 25 offence types for which a Cambridge-CHI score could not be assigned are listed in Appendix 8; these relate to only 45 crimes recorded during the five-year period (out of 471,496) and 10 crime outcomes (out of 87,411).

A simplified database schema is provided in Appendix 9 illustrating the full set of data sources and variables, and how the tables link to provide the final data-set which can be used to calculate the statistical series.

6.3 Analytical Methods

Once the data has been extracted and processed, with variables created to enable the categorisation of each crime case to the relevant statistical series, the next stage is the analyses. The analyses are based on the calculation of the statistical series outlined by the Cambridge Consensus Statement; to then compare with the current method of counting crime and detections. The analyses will be based on descriptive and comparative analysis enabled by the use of suitable data visualisations; line charts to illustrate trend information, pie-charts to show data by proportion, and bar-charts will illustrate rates (over time). Due to the comparisons being made between different counting methodologies, these comparisons will be made using description rather than based on statistical significance testing. These analytical methods will identify whether the recommended methodology for counting crime and police activity yield different results compared to the current method.

This section explains the parameters required in order to obtain the statistics for each series as per the research sub-questions. The required calculations will be based on the final data-set as illustrated in Appendix 9 utilising pivot tables in Microsoft Excel. For each statistical series, the research sub-question asks for a comparison between counting each series by count and (weighted) by harm (score). In relation to crimes recorded, the data for each performance year is managed separately, therefore processes need to be replicated for each year and then combined to formulate the statistical complete time-series. To enable replication, the specification for the required pivot tables is provided in tabular format.

Victim and Witness Reported Crime (In-Year)

Table 5 outlines the requirements for building a pivot table that provides the statistics in order to calculate the number of victim and witness reported crime committed in-year reported. Two pivot tables are required to calculate firstly the series based on count for comparison purposes and secondly based on the sum of the harm-score to calculate the weighted count.

Table 5: Pivot Table specification - Victim and witness reported (in-year) crime

Source	Crime cases recorded	
Filters	[Committed in Recorded Year]:	[In-Year]
	[Classification]:	[Victim-Based]
	[Victim: Organisation]:	[#N/A] (no [Victim: Organisation] identifier present)
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	

Historic Offences Crime Harm Index

A repeat of the processes required to calculate the Victim and Witness Reported Crime (In-Year) series but changing the [Committed in Recorded Year] identifier-variable to [Previous] will provide the data to calculate the HOCHI and the comparable series based on count.

Proactive Policing (Crime Harm) Index (PPI)

Table 6 outlines the requirements for building a pivot table in order to provide the statistics in order to calculate the PPI and the comparable series based on count.

Table 6: Pivot Table specification - Crime identified by proactive policing

Source	Crime cases recorded	
Filters	[Classification]:	[Police-Detected]
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	

Company-Detected Crime Harm Index (CDCHI)

Due to the two-stage approach to identify company-detected crimes, a two-stage process is also required in order to calculate the statistics required calculate the CDCHI. Table 7 outlines the requirements for building the pivot tables in order to provide the required statistics. One pivot table provides the results for the offence types with the [Company-Detected] identifier-variable whilst the second provides the results for crimes where the victim is identified as an organisation. The second output only includes crimes that are not already counted by the first or included in the PPI. The outputs of both processes need to be combined (summed) to provide the complete data series in relation to crime count and harm-score.

Table 7: Pivot Table specification - Company-detected crime

Source	Crime cases recorded	
Filters	[Classification]:	[Company-Detected]
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	
Source	Crime cases reported	
Filters	[Classification]:	[Victim-Based]
	[Victim: Organisation]:	[Victim Type: Organisation]
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	

Detections

Following the blueprint set out by the Cambridge Consensus Statement, the HDF will include only victim and witness reported crime, no matter when the crime case was committed ([In-Year] and [Previous] combined); therefore, excludes crime outcomes and crimes identified through proactive policing and by companies and other organisations.

Detections are presented as a rate/percentage calculated by dividing the number of 'Offender' Outcomes (detections) recorded in a time period (the numerator) by the number of crimes recorded in the same time period.

Table 8 and Table 9 outline the requirements for the pivot tables in order to calculate the statistics for the numerator and denominator and therefore the detection fractions based on pure counts and weighted by harm scores.

Table 8: Pivot Table specification - Detection fractions - Outcomes (Numerator)

Source	Crime outcomes recorded	
Filters	[Committed in Recorded Year]:	ALL ([In-Year] and [Previous])
	[Classification]:	[Victim-Based]
	[Victim: Organisation]:	[#N/A] (no [Victim: Organisation] identifier present)
	[CHI Score]:	ALL
	[Crime Disposal Year]:	[2015/16] / [2016/17] / [2017/18] / [2018/19] / [2019/20]
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	

Table 9: Pivot Table specification - Detection fractions - Recorded (Denominator)

Source	Crime cases recorded	
Filters	[Committed in Recorded Year]:	ALL ([In-Year] and [Previous])
	[Classification]:	[Victim-Based]
	[Victim: Organisation]:	[#N/A] (no [Victim: Organisation] identifier present)
	[CHI Score]:	ALL
Row Labels	[ONS Sub Group]	
For crime counts		
Count of:	[Crime Ref]	
For harm index		
Sum of:	[CHI Score]	

The specification for the pivot tables include the [Committed in Recorded Year] and [CHI Score] variables; whilst not required for the calculations for the statistical series outlined by the Cambridge Consensus Statement nor the research sub-question, as this is a completely new way of measuring detections, they are included so that the impact of historic crimes and focussing on high-harm crimes can be measured to provide an extra level of insight.

7. Results

This chapter presents the results of applying the methodology for counting crime and policing, as outlined in the Cambridge Consensus Statement, to Devon and Cornwall data. It systematically answers the sub-questions that underpin the key research question outlined in the research contract. The first six sub-questions require the calculation of the seven recommended statistical series. The answer to the final sub-question requires an overview of the definitional, methodological or data processing issues identified in applying this methodology, this will be answered in the discussion chapter.

7.1 Overview of Counting Crime

At the highest level, the application of the methodology for counting crime provides insight to the proportion of crimes recorded in each of the statistical series. Figures 2 and 3 illustrate the proportion of crime in Devon and Cornwall recorded in 2019/20 by statistical series weighted by Cambridge-CHI and pure count respectively. For comparison purposes, this insight is replicated for 2015/16 in Figures 4 and 5. The insight will be described as part of the response to the relevant sub-question.

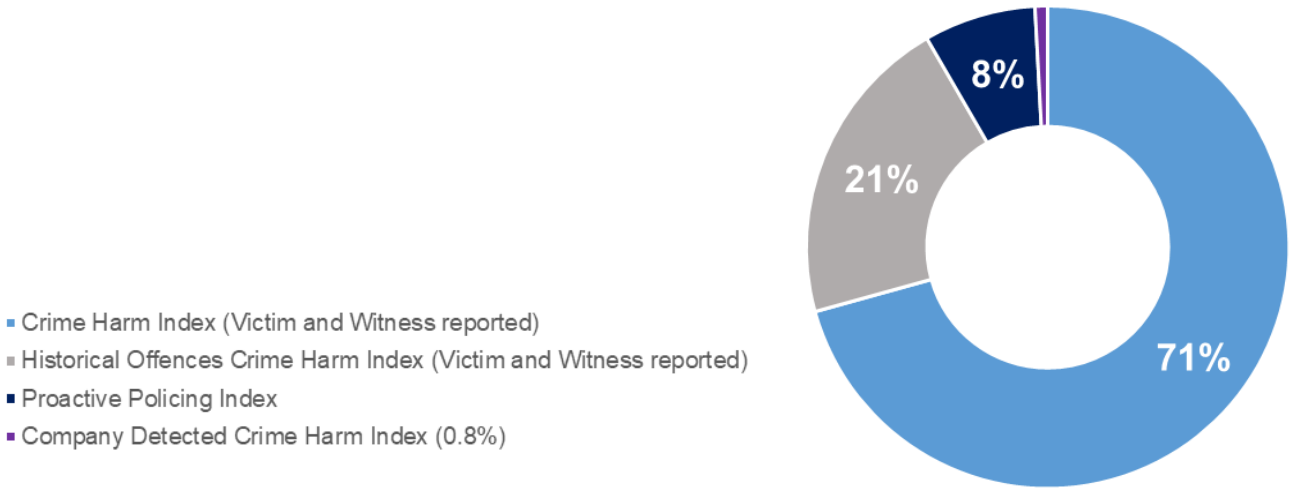


Figure 2: Crime in Devon and Cornwall 2019/20 weighted by CHI by statistical series

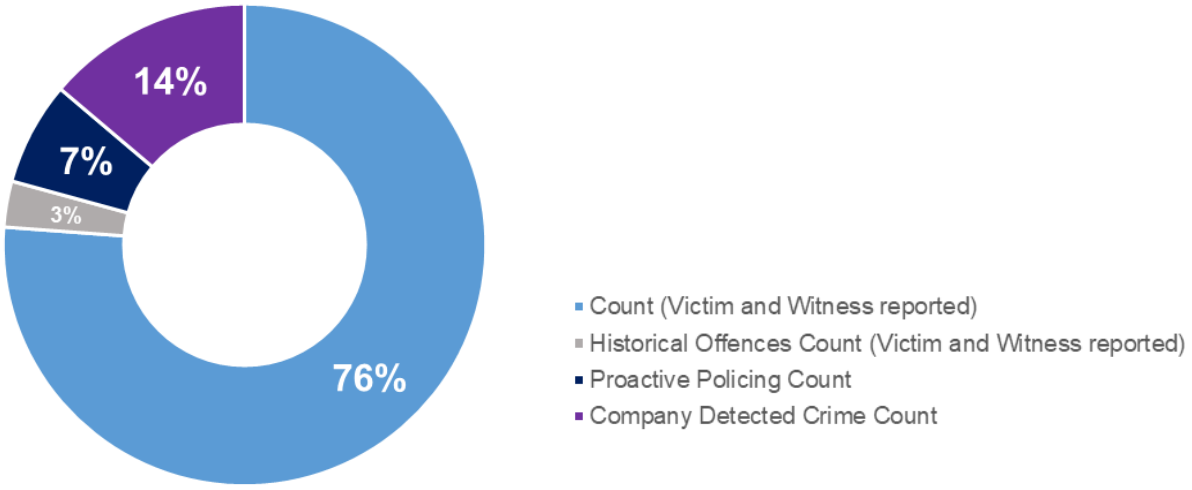


Figure 3: Crime (count) in Devon and Cornwall 2019/20 by statistical series

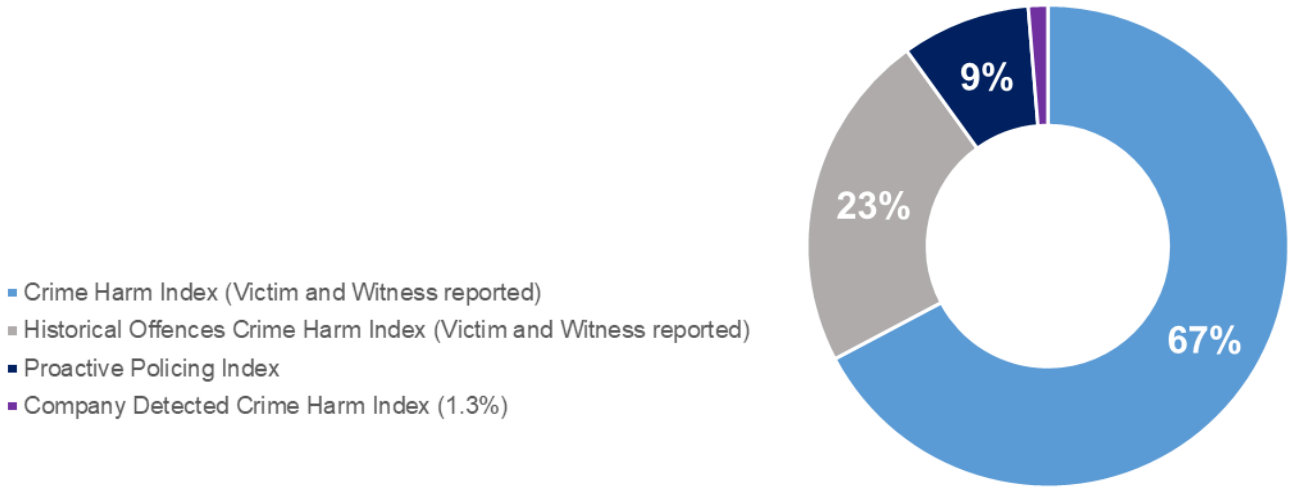


Figure 4: Crime in Devon and Cornwall 2015/16 weighted by CHI by statistical series

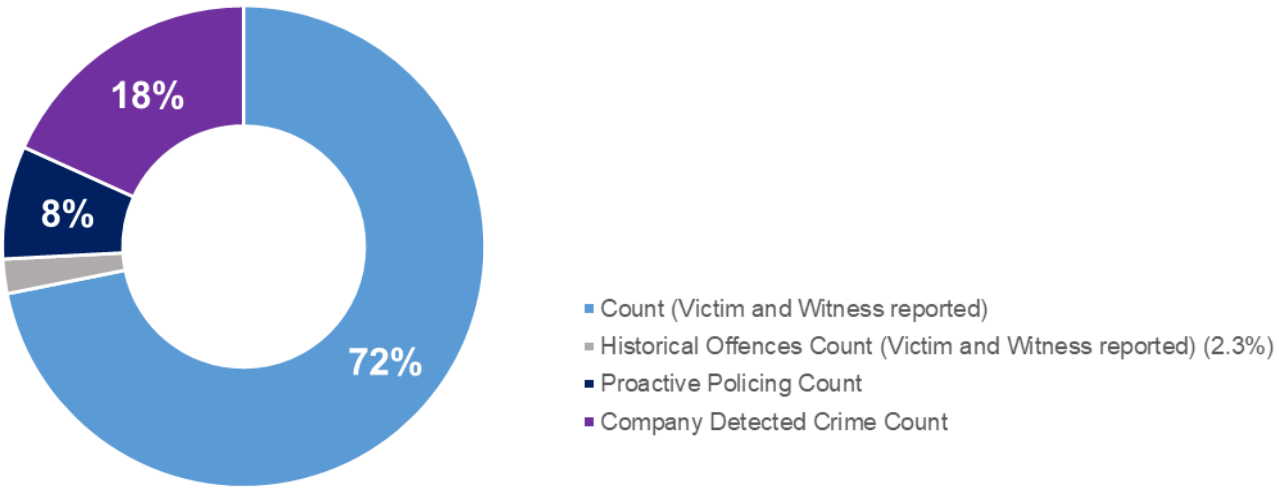


Figure 5: Crime (count) in Devon and Cornwall 2015/16 by statistical series

7.2 Victim and Witness Reported Crime (In-Year)

a) How different is the trend in annual crime count from the trend in annual total Cambridge Crime Harm Index for victim- and witness-reported crimes that occurred in each year?

Table 10 and Figure 6 show that the count of recorded crimes reported (in-year committed) by victims and witnesses has increased each year during the first four years of the five-year period analysed and a decrease recorded in 2019/20 (compared to the previous two years). Relative to the total crime count (all statistical series combined), the proportion that are crimes reported (in-year committed) by victims and witnesses has increased each year. In 2019/20, such crimes account for 76% of the total recorded crime count, four percentage-points more than the proportion in 2015/16. Due to this category accounting for the majority of the total count, the trend pattern is the same as for the total crime rate (see context).

Year-on-year increases in the total harm-score attributed to recorded crimes reported (in-year committed) by victims and witnesses are evident in all years analysed. Relative to the total harm-score recorded, the proportion of harm-score associated with crimes reported (in-year committed) by victims and witnesses has increased over the five-year period. In 2019/20, the harm-score associated with such crimes accounts for 71% of the total harm-score; again, four percentage-points more than the proportion in 2015/16.

Table 10: Victim and witness reported crime committed in-year reported

	Crime Count	CHI Score	Ratio (1 Crime Count: X CHI Score)
2015-16	55,344	3,360,888	61
2016-17	61,087	3,848,779	63
2017-18	76,317	4,970,109	65
2018-19	80,137	5,321,780	66
2019-20	76,130	5,454,580	72
Five Year Total	349,015	22,956,136	66

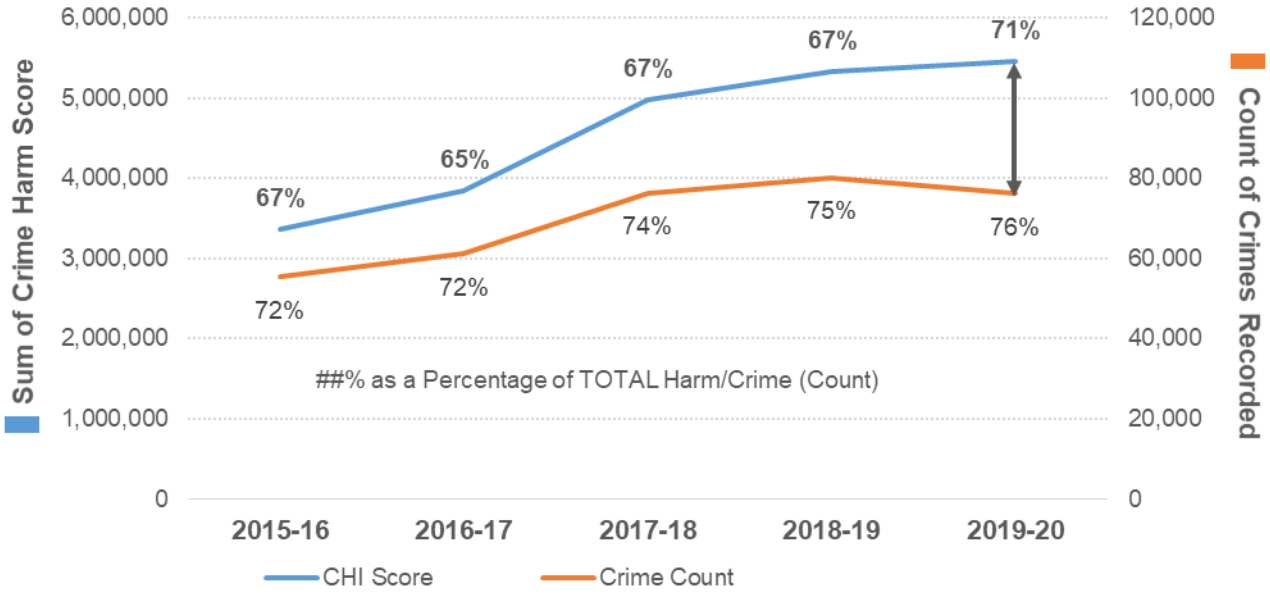


Figure 6: Five-year trend - Victim and witness reported crime committed in-year reported

The percentage-point increase in the proportion of crime that is reported (in-year committed) by victims and witnesses between 2015/16 and 2019/20 is equal for the count of crime and when weighted by CHI. However, the trends do differ; particularly the decrease in crime count in 2019/20 amplifying the increasing divergence between crime count and harm-score. Table 10 also provides the ratio of harm-score per crime reported (in-year committed) by victims and witnesses and shows an increasing trend year-on-year. In 2019/20, for each individual crime case reported (in-year committed) by victims and witnesses, there is an associated harm-score of 72; this equates to an extra 11 days recommended imprisonment per crime compared to each crime recorded in 2015/16.

Figure 7 and Figure 8 illustrate the breakdown of crime in Devon and Cornwall recorded in 2019/20 reported (in-year committed) by victims and witnesses by offence group weighted by CHI and pure counts respectively. These charts are replicated at sub-offence group level, they imitate the pie-charts produced to demonstrate the Cambridge-CHI in the Sherman et al. (2016) article (Appendix 10 and 11).

- Crimes within the offence group Violence against the person account for 39% of the total harm-score associated with crimes reported (in-year committed) by victims and witnesses and 51% of the total count. The charts at sub-offence group level show that within the Violence against the person offence group, the majority of the total harm-score is attributable to Violence with injury. Violence with injury offences account for 33% of the total harm-score, yet 20% of the total count. Violence without injury and Stalking and harassment offences account for 19% and 12% of the total count of crime respectively, yet only 3% and 2% respectively of the total harm-score.
- Sexual offences account for 49% of the total harm-score compared to only 4% of the total count.
- Conversely, whilst accounting for 45% of the total count, Robbery, Theft offences, Criminal damage and arson, and Other offences against society combined account for only 15% of the total harm-score.

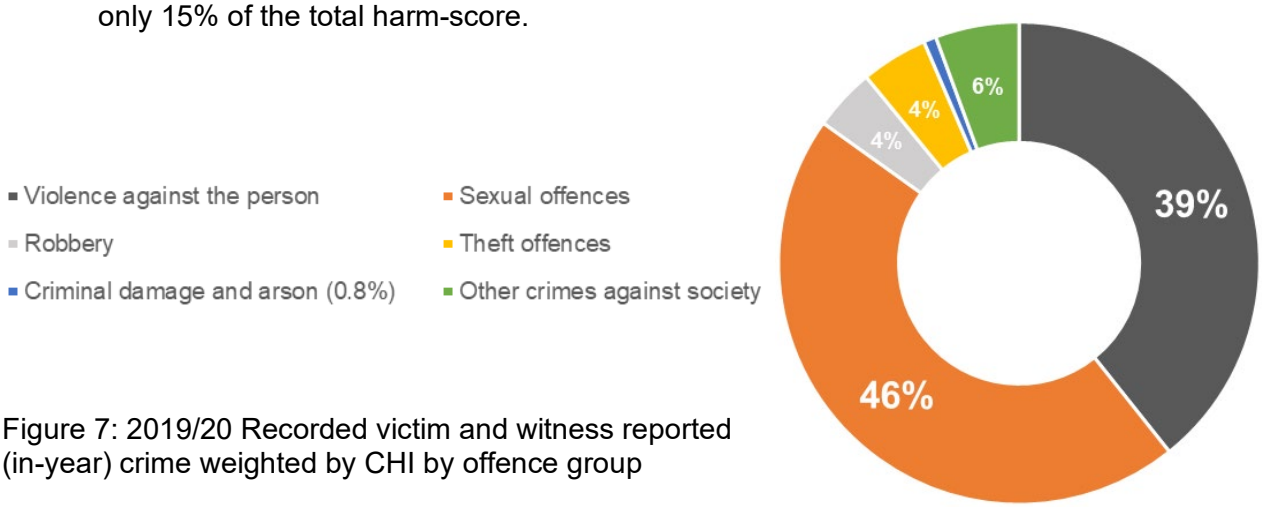


Figure 7: 2019/20 Recorded victim and witness reported (in-year) crime weighted by CHI by offence group

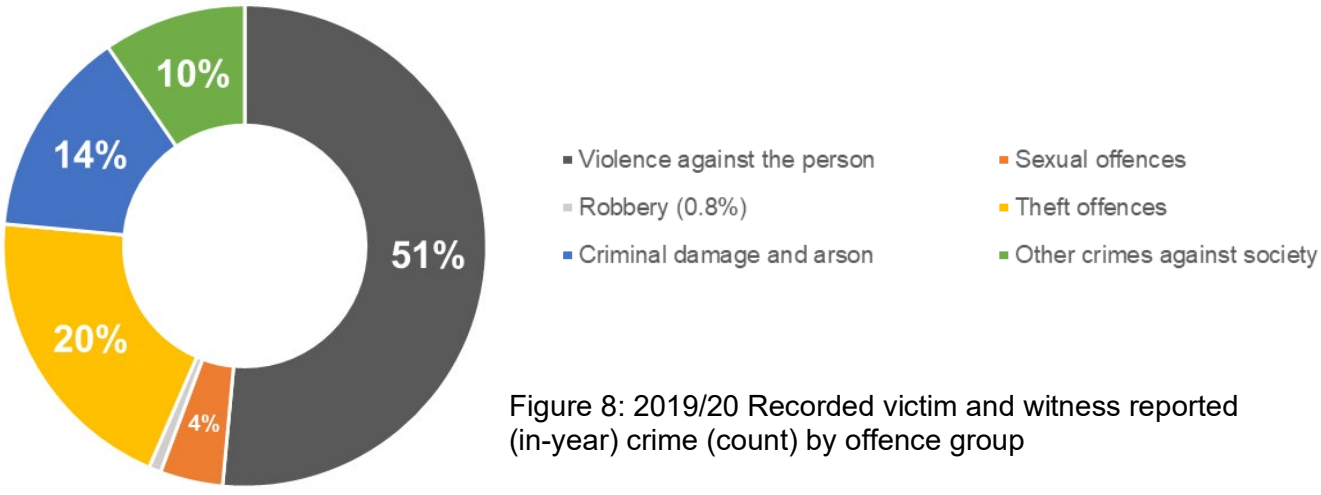


Figure 8: 2019/20 Recorded victim and witness reported (in-year) crime (count) by offence group

7.3 Historic Offences Crime Harm Index (HOCHI)

b) What is the trend in the Historic Offences CHI (HOCHI) reported each year for cases that occurred in prior years?

Table 11 and Figure 9 show that the count of recorded crimes committed in previous year(s) reported by victims and witnesses has increased each year during 2016/17, 2017/18 and 2018/19 and a slight decrease (1.5%) recorded in 2019/20 (compared to the previous year). Relative to the total crime count (all statistical series combined), the proportion that are classified as historic has remained relatively stable. In 2019/20, such crimes account for 3.1% of the total recorded crime count, 0.8 percentage-points more than the proportion in 2015/16.

Year-on-year increases in the total harm-score attributed to recorded crimes committed in previous year(s) reported by victims and witnesses are evident in 2016/17 and 2017/18 compared to the previous year. Unlike the crime count which continued to increase in 2018/19, the total harm-score starts to decrease, albeit only slightly; a further decrease is recorded in 2019/20. Relative to the total harm-score recorded, the proportion within the HOCHI peaked at 26% in 2016-17 and reduced each year since. In 2019/20, the harm-score associated with the HOCHI accounts for 21% of the total harm; two percentage-points less than the proportion in 2015/16.

The ratio of harm-score per recorded crime committed in previous year(s) shows a decreasing trend year-on-year. In 2019/20, for each crime case reported there is an associated harm-score of 525; this equates to 115 fewer recommended days imprisonment per crime compared to each crime recorded in 2015/16.

Table 11: Victim and witness reported crime committed in previous year(s) than reported

	Crime Count	CHI Score	Ratio (1 Crime Count: X CHI Score)
2015-16	1,779	1,138,528	640
2016-17	2,478	1,539,408	621
2017-18	3,117	1,846,834	593
2018-19	3,128	1,822,820	583
2019-20	3,081	1,616,524	525
Five Year Total	13,583	7,964,114	586

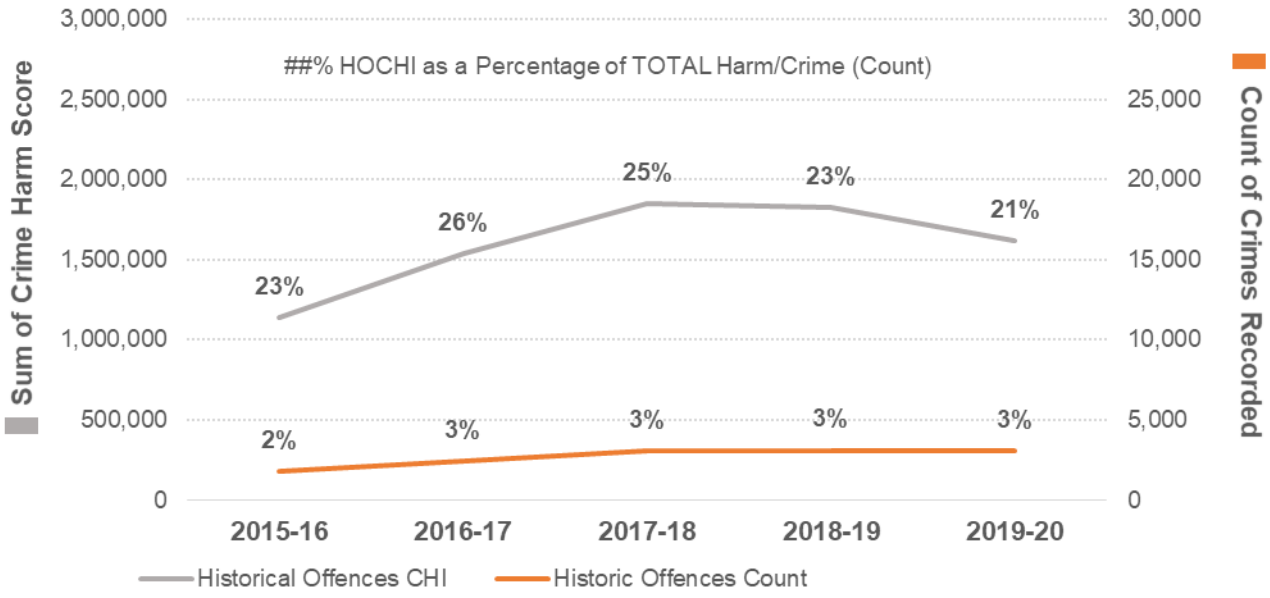


Figure 9: Five-year trend - Victim and witness reported crime committed in previous year(s) than reported

Figures 10 and 11 illustrate the breakdown of crime in Devon and Cornwall reported by victims and witnesses in 2019/20 but committed in previous year(s) by offence group weighted by CHI and pure counts respectively.

- Crimes within the offence group Violence against the person account for 43% of the count, yet only 5% of the HOCHI.
- Sexual offences account for 91% of the HOCHI compared to 37% of the count.
- Conversely, whilst accounting for 20% of the count, Robbery, Theft offences, Criminal damage and arson, and Other offences against society combined account for only 4% of the HOCHI.

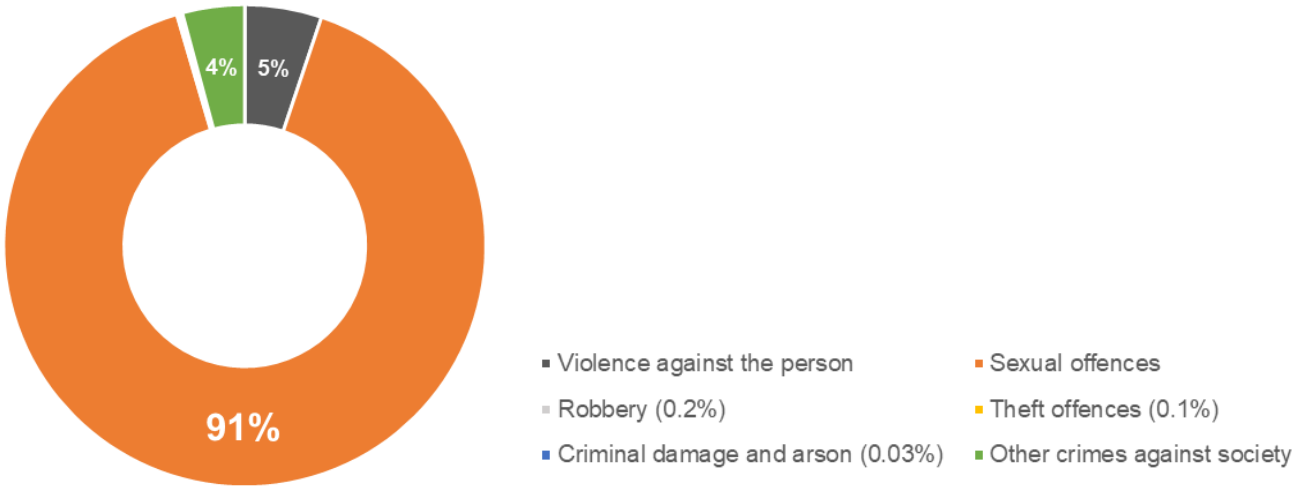


Figure 10: 2019/20 Recorded victim and witness reported crime committed in previous year(s) than reported weighted by CHI by offence group

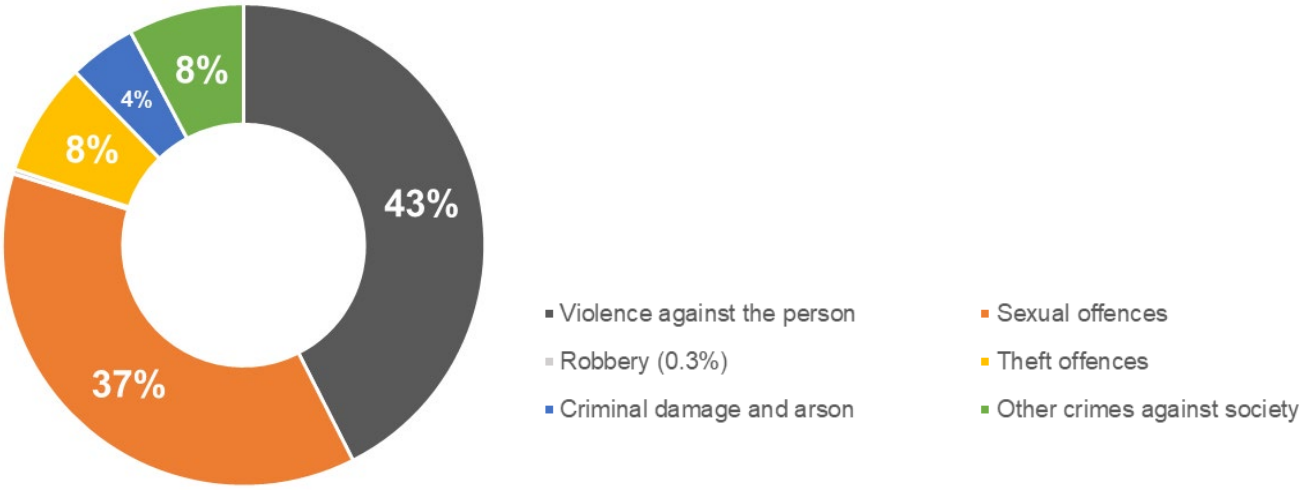


Figure 11: 2019/20 Recorded victim and witness reported crime (count) committed in previous year(s) than reported by offence group

7.3 Proactive Policing (Crime Harm) Index (PPI)

c) What offences in Devon and Cornwall can be identified as proactively detected in 100% or in a high proportion of cases, and what proportion of cases arguably belonging in a Proactive Policing Index (PPI).

The offences that are included in the PPI is outlined in the methodology section. Relative to the total crime count (all statistical series combined). Over the entire five-year period, crime cases that can be attributed to proactive policing equate to 7% of the total crime count.

d) To what extent does the removal of the cases (identified in c.) change the CHI and crime count totals? Is the PPI consistent on a year-on-year basis or highly variable?

In 2019/20, offences included in the PPI account for 7% of the total crime count (all statistical series combined) and 8% of the total harm-score recorded. Table 12 and Figure 12 show that the count of recorded crime recorded as a result of proactive policing has increased during 2016/17, 2017/18 and 2018/19 and a slight decrease recorded in 2019/20 (compared to the previous year). Relative to the total crime count, the proportion of crimes recorded as a result of proactive policing has remained relatively stable. In 2019/20, such crimes account for 6.9% of the total recorded crime count (Figure 3 and Figure 12), 0.7 percentage-points less than the proportion in 2015/16.

Year-on-year increases in the total harm-score attributed to crimes recorded as a result of proactive policing are evident during 2016/17, 2017/18 and 2018/19 and a decrease recorded in 2019/20 (compared to the previous year). Relative to the total harm-score recorded, the proportion of harm-score associated with crime recorded as a result of proactive policing has also remained relatively stable. In 2019/20, the harm-score associated with such crimes accounts for 7.5% of the total harm-score, 1.2 percentage-points less than the proportion in 2015/16

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Table 12: Crime recorded as a result of proactive policing

	Crime Count	CHI Score	Ratio (1 Crime Count: X CHI Score)
2015-16	5,849	432,423	74
2016-17	5,966	454,314	76
2017-18	6,627	549,816	83
2018-19	7,046	668,865	95
2019-20	6,929	578,744	84
Five Year Total	32,417	2,684,162	83

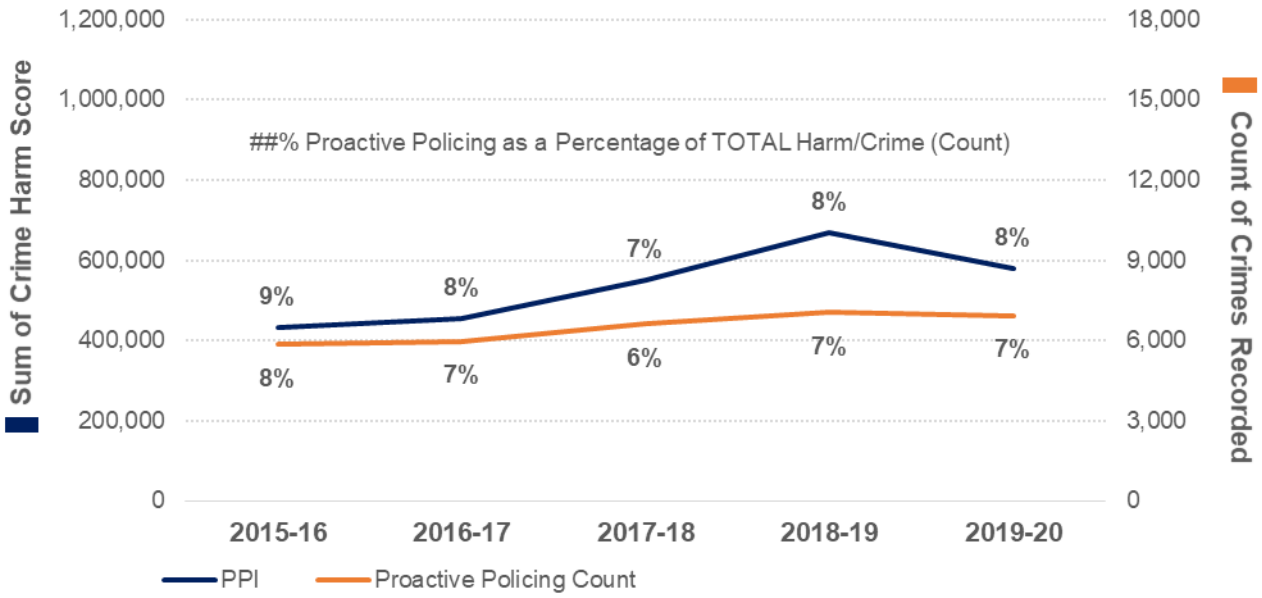

Figure 12: Five-year trend - Crime recorded as a result of proactive policing

Table 12 also provides the ratio of harm-score per recorded crime recorded as a result of proactive policing and shows an increasing trend during 2016/17, 2017/18 and 2018/19 and a decrease recorded in 2019/20 (compared to the previous year). In 2019/20, for each crime case recorded as a result of proactive policing there is an associated harm-score of 84; this equates to an extra 10 days recommended imprisonment per crime compared to each crime recorded in 2015/16.

Figures 13 and 14 illustrate the breakdown of crime in Devon and Cornwall recorded as a result of proactive policing in 2019/20 by offence group weighted by CHI and pure counts respectively.

- Crimes within the offence group Offences against society account for 85% of the total PPI and 92% of the count.
- Crimes within the offence group Violence against the person account for 14% of the total PPI and 8% of the count.
- Sexual offences account for a small proportion of the PPI and of the count.

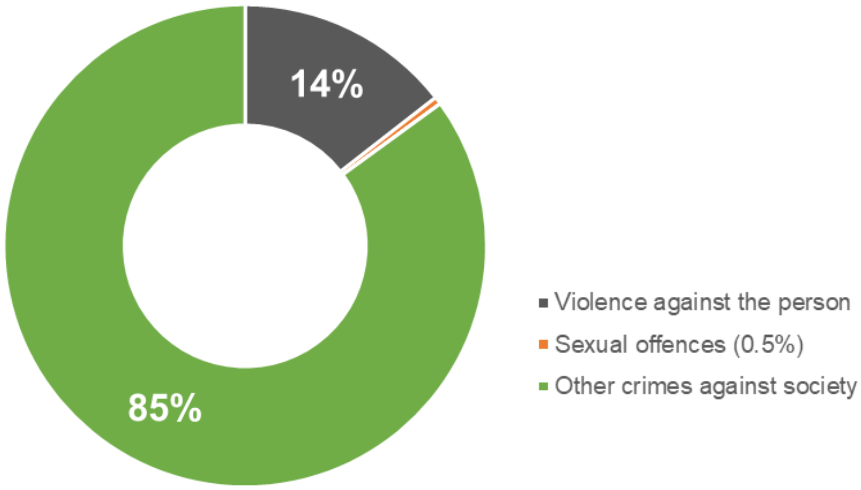

Figure 13: 2019/20 Crime recorded as a result of proactive policing weighted by CHI by offence group

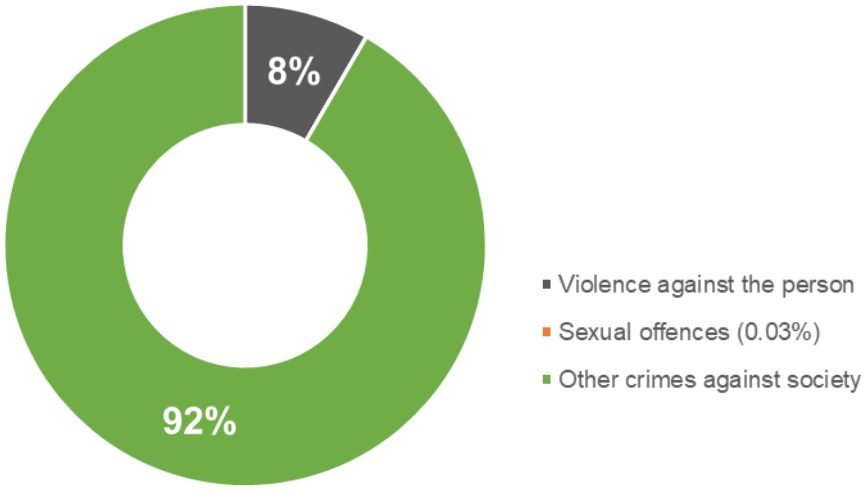

Figure 14: 2019/20 Crime (count) recorded as a result of proactive policing by offence group

7.4 Company-Detected Crime Harm Index (CDCHI)

e) How can company-detected crimes be identified within the existing crime records systems, and what proportion of crime count and CHI is extracted from the total in creating a Company-Detected CHI (CDCHI)?

The answer to the first part of this sub-question is provided in the methodology chapter.

In 2019/20, offences reported by companies or other organisations account for 14% of the total crime count (all statistical series combined), yet only 0.8% of the total harm-score recorded. Table 13 and Figure 15 show that the count of recorded crimes reported by companies or other organisations increased until 2017/18 and declined in subsequent years to the lowest number in 2019/20. Relative to the total crime count (all statistical series combined), the proportion that are crimes reported by companies or other organisations has decreased since the first two years analysed. In 2019/20, such crimes account for 14% of the total recorded crime count, four percentage-points less than the proportion in 2015/16.

A relatively stable trend in the total harm-score attributed to crimes reported by companies or other organisations is evident during the five-year period analysed. Relative to the total harm-score recorded, the proportion of harm-score associated with the CDCHI has also remained relatively stable. In 2019/20, the CDCHI accounts for just 0.8% of the total harm-score, 0.5 percentage-points less than the proportion in 2015/16.

Table 13: Crime reported by companies and other organisations

	Crime Count	CHI Score	Ratio (1 Crime Count: X CHI Score)
2015-16	14,039	65,347	4.7
2016-17	15,126	67,138	4.4
2017-18	17,059	73,736	4.3
2018-19	16,471	72,687	4.4
2019-20	13,786	65,408	4.7
Five Year Total	76,481	344,316	4.5

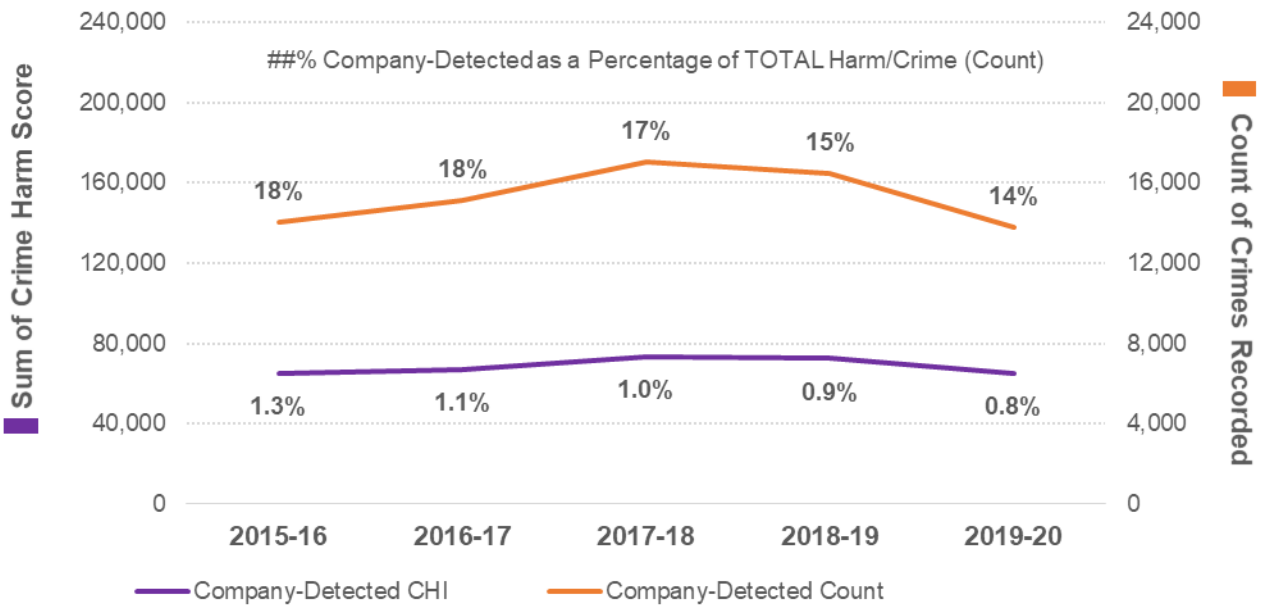

Figure 15: Five-year trend - Crime reported by companies and other organisations

Table 13 also provides the ratio of the CDCHI per recorded crime and also shows a relatively stable trend over the five-year period analysed. In 2019/20, for each crime case reported by companies or other organisations there is an associated harm-score of 4.7; this is equal to the ratio recorded in 2015/16.

Figures 16 and 17 illustrate the breakdown of crime in Devon and Cornwall reported by companies or other organisations in 2019/20 by offence group weighted by CHI and pure counts respectively.

- Theft offences account for 74% of the crimes reported by companies or other organisations, this reduces to 49% when weighted by CHI.
- Criminal damage and arson offences account for 23% of the count and 23% of the total harm-score.
- Crimes within the offence group Offences against society account for only 2.2% of the count yet make up 15% of the CDCHI.
- Robbery accounts for only 0.2% of the count of crimes reported by companies or other organisations but this increases to 12% of the CDCHI.

- At 0.8% and 0.6%, offences in the Violence against the person offence group make up a small fraction of the count and CDCHI respectively.

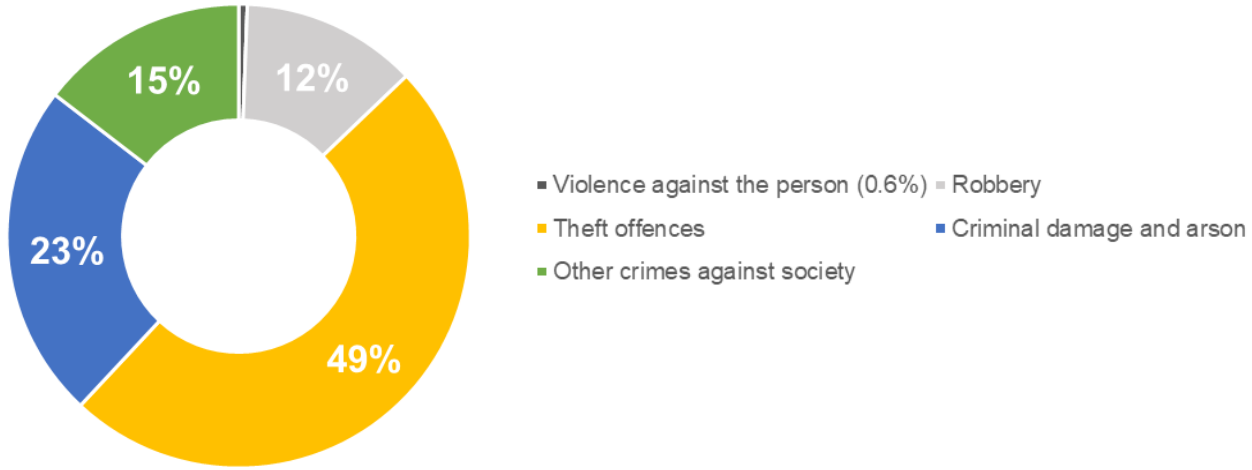

Figure 16: 2019/20 Crime reported by companies and other organisations weighted by CHI by offence group

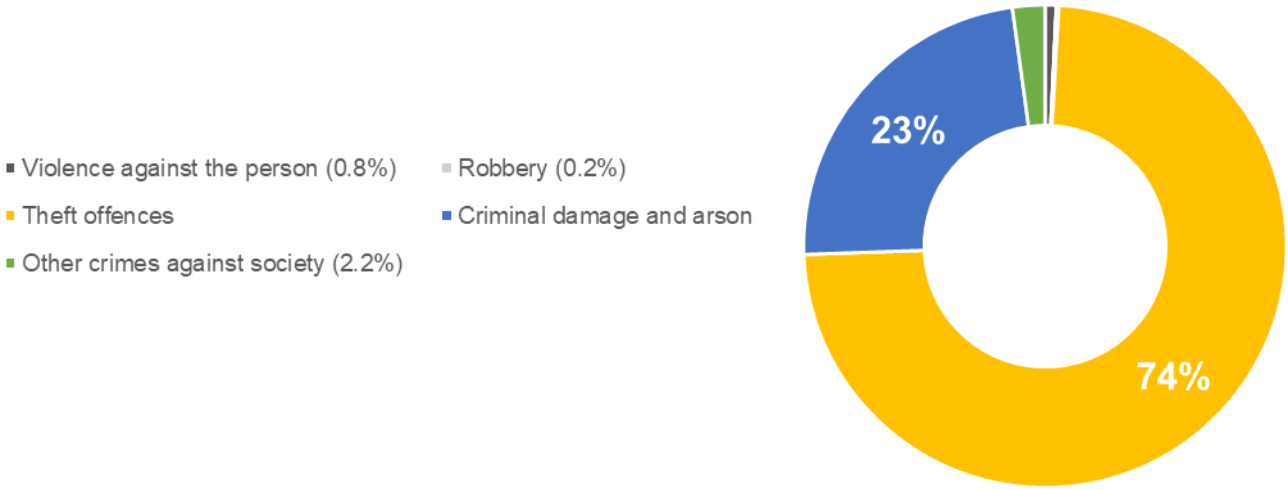

Figure 17: 2019/20 Crime (count) reported by companies and other organisations by offence group

7.5 Detections

f) How does the standard detection-rate for all offences change if those offences are weighted by CHI scores to create a Harm Detection Fraction (HDF)?

Table 14 and Figure 18 show that the count of detections recorded in relation to all crimes reported by victims and witnesses (in-year and previously) has decreased year-on-year during the five-year period analysed; this trend stabilised in 2019/20 with the number of detections recorded equating to only 0.4% fewer than during 2018/19. In 2019/20, 7,721 detections were recorded in relation to crimes reported by victims and witnesses, 31% fewer than recorded in 2015/16.

Table 14 and Figure 18 also show that, when weighted by CHI, the harm-score in relation to all crimes reported by victims and witnesses that result in a detection has decreased each year during 2016/17, 2017/18 and 2018/19; the trend stabilised in 2019/20 with the harm-score equating to a slight increase (0.2%) compared to the previous year. In 2019/20, the total harm-score associated with detected crimes reported by victims and witnesses is 22% less than in 2015/16.

Table 14: Detections - all victim and witness reported crime

	Detections (Count)	Detections (weighted by CHI)	Ratio (1 Detection Count: X CHI Score Detected)
2015-16	11,202	1,099,720	98
2016-17	9,136	1,067,403	117
2017-18	8,406	870,268	104
2018-19	7,752	860,732	111
2019-20	7,721	862,347	112

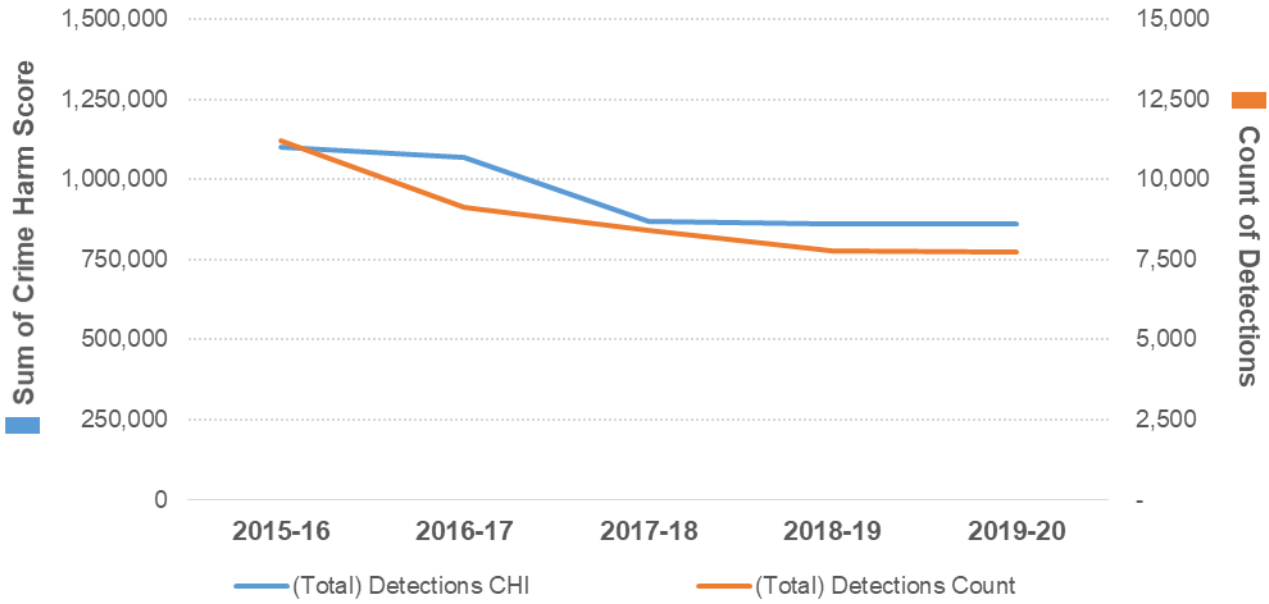

Figure 18: Five-year trend - Detections in relation to all Victim and witness reported crime

The ratio of harm-score per detected crime shows an overall increasing trend over the five-year period. In 2019/20, for each detected crime, there is an associated harm-score of 112; this equates to an extra 14 days recommended imprisonment per crime detected compared to 2015/16.

Table 15 and Figure 19 present the statistics in relation to detections expressed as a percentage of all crime recorded each year reported by victims and witnesses (count and weighted). The detection-rate and the HDF follow similar trends. A decreasing trend is evident in both series during 2016/17, 2017/18 and 2018/19 and a slight increase is evident in 2019/20 (compared to 2018/19). Both series are relatively stable during the last three years of the time period analysed. In 2019/20, one percentage-point of the detection-rate equated to 1.3 percentage-points of the HDF. This ratio has remained relatively stable across the five-year period analysed.

Table 15: Detection-rate (counts) compared to HDF

	Detection Rate (% of reported crime count)	HDF (% of reported CHI)	Ratio (1 Detection Count: X CHI Score Detected) Unit: Percentage-point(s)
2015-16	19.6%	24.4%	1.2
2016-17	14.4%	19.8%	1.4
2017-18	10.6%	12.8%	1.2
2018-19	9.3%	12.0%	1.3
2019-20	9.7%	12.2%	1.3

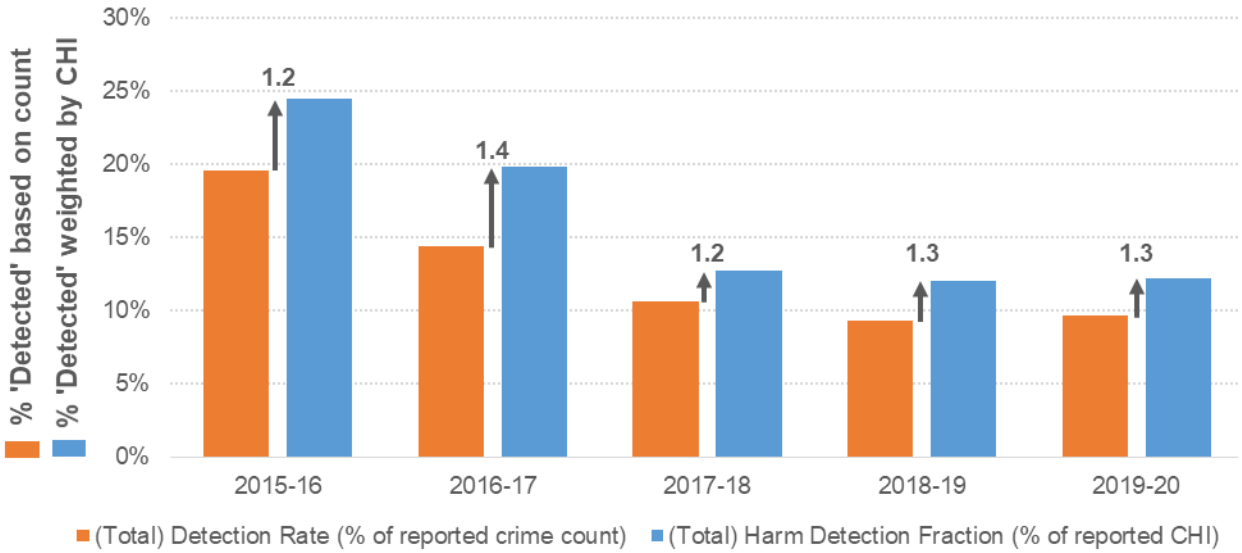

Figure 19: Five-year trend - Detection-rate compared to HDF

Table 16 and Figure 20 provide the breakdown (by offence group) of crimes recorded as 'detected' in 2019/20. Table 16 is replicated at sub-offence group level (Appendix 12).

- The detection-rate equates to 11% for Violence against the person offences. This increases to 24% when the counts are weighted by CHI (HDF). One percentage-point of the detection-rate equates to 2.2 percentage-points of the HDF. At sub-offence group level, the HDF is higher than the detection-rate for Homicide, Violence with injury, Stalking and harassment, and Death or serious injury – unlawful driving. At 9%, the HDF for Violence without injury is two percentage-points lower than the detection-rate.

- 6% of Theft offences are detected, this increases to 9% when weighted by CHI. One percentage-point of the detection-rate equates to 1.6 percentage-points of the HDF. The HDF is higher than the detection-rate for all sub-offence groups.
- 9% of Criminal damage and arson offences are detected, this increases to 15% when weighted by CHI. One percentage-point of the detection-rate based on count equates to 1.7 percentage-points of the HDF.
- All offences within the Robbery offence group have the same harm-score associated, therefore the detection-rate (12%) is equal to the HDF.
- 8% of Sexual offences are detected. However, this decreases by two percentage-points when weighted by CHI. One percentage-point of the detection-rate based on count equates to 0.7 percentage-points of the HDF.
- 14% of crimes within the offence group Other offences against society are detected, this decreases to 13% when weighted by CHI. One percentage-point of the detection-rate based on count equates to 0.9 percentage-points of the HDF.

Table 16: 2019/20 - Police activity measure: Detection-rate compared to HDF by offence group

	Detection Rate (% of reported crime count)	HDF (% of reported CHI)	Ratio (1 Detection Count: X CHI Score Detected) Unit: Percentage-point(s)
Violence against the person	11.0%	23.6%	2.2
Sexual offences	8.2%	5.8%	0.7
Robbery	12.5%	12.5%	1.0
Theft offences	5.5%	9.1%	1.6
Criminal damage and arson	9.0%	15.5%	1.7
Other crimes against society	13.6%	12.5%	0.9

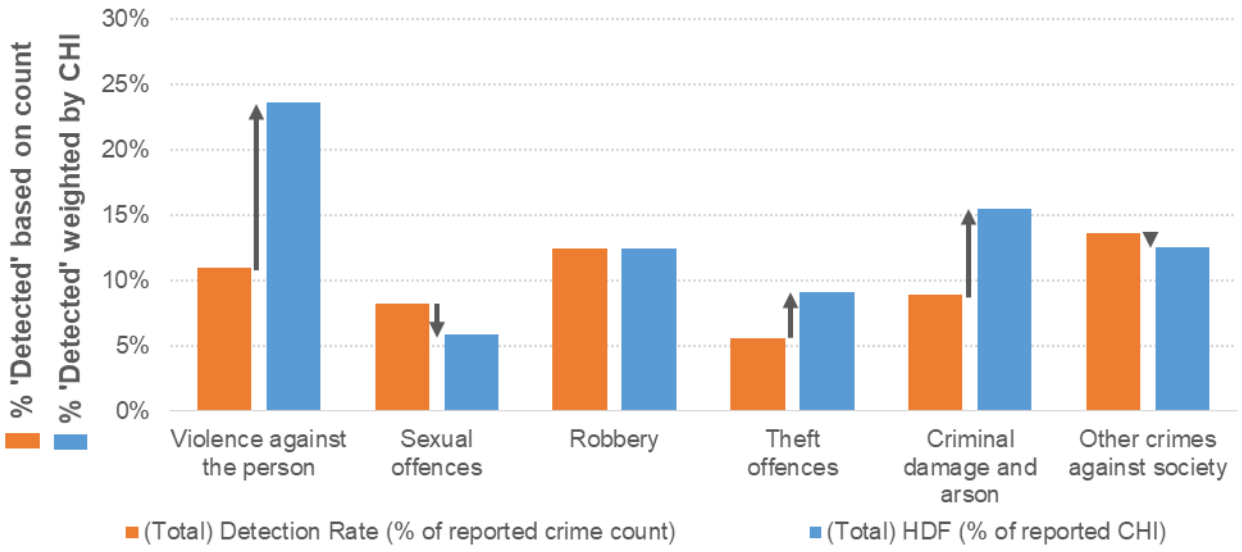

Figure 20: 2019/20 - Police activity measure: Detection-rate compared to HDF by offence group

To provide an extra level of insight, the detection-rate and HDF have been calculated for only: crimes reported (in-year committed) by victims and witnesses; (all) high-harm crimes reported by victims and witnesses (recommended starting sentence is 500 days or greater); and high-harm crimes reported (in-year committed) by victims and witnesses. To ensure a suitable sample size, the calculations for 'detections' relating to high-harm crimes are based on the most recent three years data, a level of consistency during the three years has already been evidenced. Table 17 details the results.

- Focussing only on crimes reported (in-year committed) by victims and witnesses, at 9.8%, the detection-rate in 2019/20 is 0.1 percentage-point more than the detection-rate for all crime reported by victims and witnesses. Whereas, at 13.5%, the HDF is 1.3 percentage-points higher. One percentage-point of the detection-rate based on count now equates to 1.4 percentage-points of the HDF.
- Focussing on all high-harm crimes (CHI ≥ 500) reported by victims and witnesses, at 12.0% the detection-rate is 2.3 percentage-points more than the detection-rate for all crime reported by victims and witnesses in 2019/20. However, the HDF is slightly less at 11.7%; the difference between the detection-rate based on counts and the HDF is

marginal. There is a one-to-one relationship between the two measures (one percentage-point of the detection-rate equates to one percentage-point of the HDF).

- The final sub-category focusses on high-harm crimes (CHI ≥ 500) reported by victims and witnesses, but now limited to crimes reported in-year committed. At 13.2% the detection-rate is 3.5 percentage-points more than the detection-rate for all crime reported by victims and witnesses in 2019/20. Converse to the previous calculation, the HDF in relation to high-harm crimes reported in-year committed is slightly more at 13.6%; however, as with the previous calculation, the difference is so marginal that there remains a one-to-one relationship between the measures.

Table 17: Police activity measure: Detection-rate (counts) compared to HDF - alternative categorisations

	Detection Rate (% of reported crime count)	HDF (% of reported CHI)	Ratio (1 Detection Count: X CHI Score Detected) Unit: Percentage-point(s)
All Victim and witness reported crime **2019-20**	9.7%	12.2%	1.3
Victim and witness reported crime committed in-year reported **2019-20**	9.8%	13.5%	1.4
All Victim and witness reported crime (CHI≥500) **2017/18, 2018/19, 2019/20 combined**	12.0%	11.7%	1.0
All Victim and witness reported crime committed in-year reported (CHI≥500) **2017/18, 2018/19, 2019/20 combined**	13.2%	13.6%	1.0

8. Discussion

This research has identified a number of findings worthy of further discussion. This chapter will discuss the main points that the review of literature identified, the methodological challenges in applying the recommended blueprint for counting crime outlined by the Cambridge Consensus Statement, and the interpretation of the results. The chapter concludes with a discussion of the policy implications for this research alongside the identification of any possible risks or negative consequences that can be planned for and mitigated where necessary.

8.1 Existing Evidence-Base

As review of literature found that there is a clear appetite within policing in England and Wales, and internationally, to measure harm rather than purely relying on crime counts to understand demand, levels of public-safety, and resource allocation. There now exists a broad evidence-base where a harm-metric, that weights crime counts, has been developed and implemented; the growing evidence-base indicates that sentencing information is the favoured metric. In some countries the choice of specific metric is sometimes limited by the availability of data, for instance some countries do not have sentencing guidelines and are therefore forced to consider other options. There are two such metrics available in England and Wales, the Cambridge-CHI and the ONS developed CSS; but having two options is somewhat problematic in deciding which to adopt. The comparison undertaken by Ashby (2017) revealed how each produces substantially differing results, thus decision-making based on the insight provided will be impacted by which metric is used. Whilst Ashby (2017) is not able to answer the question: which is the best measure, it is a question that needs answering. An ‘official’ national harm-metric, as per other national harm indexes cited by this research, would assist greatly in the progression and development of that metric. If the three ‘essential criteria’ that Sherman et al. (2016) outline is deemed as *the* criteria for an ‘official’ national metric, the first question is whether either metric passes. It can be argued that the neither metric fully passes the ‘democracy test’ as neither is

approved or recognised as an ‘official’ national approach. However, there is a stronger case for the Cambridge-CHI as it is based on the expert views of the Sentencing Council, who, delegated to by the government, set the recommended starting sentences for the sentencing guidelines. The process for setting these guidelines will take into account and reflect the “will of the people” (Sherman, 2013). In relation to the ‘reliability test’, due to the potential for the average sentence given to offenders to change over time, and therefore the weight changing over time, the CSS fails to pass due to the potential inconsistency. Whilst there is potential for the Cambridge-CHI to be impacted by any changes to the sentencing guidelines, these will be infrequent and are likely to reflect the public’s view at the time. Both methods pass the ‘cost test’ as there is no need for heavy investment from policing to implement. However, both methods require development and that does have a time, and therefore financial, cost attached.

For valid reasons at the time, the Cambridge-CHI was originally developed for application to victim and witness reported crime. As other countries have developed a CHI based on evidence-based practice, researchers have added and strengthened the evidence-base themselves. Of particular interest are the further opportunities identified in the literature, namely:

- a separate ‘appendix’ to measure harm proactively identified by policing activity (Andersen and Mueller-Johnson, 2018);
- the separation of historic crimes committed during a previous year to that reported (House and Neyroud, 2018); and
- The application of a CHI to crime detection-rates (Kärrholm et al., 2020).

All three opportunities are factored into the latest recommended blueprint for how crime should be counted presented by the Cambridge Consensus Statement (2020).

8.2 Challenges in Application

It has already been discussed that the lack of an ‘official’ national metric for harm is one blocker to full scale adoption of the Cambridge Consensus Statement methodology. This section focuses

on the practical challenges that have been identified by applying the Cambridge Consensus Statement methodology. These can be seen as opportunities to provide a solution that supports and facilitates the implementation of the methodology across the police service in England and Wales. In essence, this section looks to answer the final sub-question:

g) If the NPCC were to consider endorsement of the creation of a parallel statistical series based on the method detailed in the Cambridge Consensus statement, what would be the major definitional and methodological or data processing issues to be addressed?

As acknowledged by the Cambridge Consensus Statement, the Cambridge-CHI look-up table is a partial look-up table (Sherman, 2020). The incompleteness of the Cambridge-CHI look up table resulted in 206 offence types (35 percent of the 576 offence types included in all the Devon and Cornwall extracts) without a corresponding CHI score in the look-up table. A considerable effort was made to fill this gap and only 25 offence types remained for which a Cambridge-CHI score could not be assigned with confidence; however, relative to the size of the data-set, the 45 crime cases and 10 crime outcomes for which a Cambridge-CHI score could not be assigned represents a negligible proportion. Whilst this research has provided a starting point for filling the gaps in the Cambridge-CHI look-up table, a level of ratification would be required as well as efforts to fully complete the index for *all* offence types that could be contained within police crime data. A comprehensive index would require the inclusion of offence types/codes that have been replaced to allow weightings to be applied to outcomes/detections and historic crimes reported but committed when such offence types were current.

The major definitional issue relates to the manual assigning of offences to the proactive policing crime and company-detected crime indexes and associated ambiguity within the process; to be as open and transparent as possible, the lists of which offences are included in each index is provided in the appendices. In relation to the PPI, whilst not overtly mentioned in the Cambridge Consensus Statement, this research has included crimes that relate to assault on a constable in the execution of duty or to resist arrest and breaches or non-compliance with orders or conditions

set by the police. The rationale for the former is that whilst not *identified* through proactive policing, such crimes would not have occurred without the policing activity being undertaken; however, should such crimes be included in a category where 'credit' is implied and associated with preventative activity? The rationale for including breaches or non-compliance with orders or conditions set by the police is that such crimes would not have occurred without the order being in place, thus proactive policing in the pursuit of preventing harm; however, these crimes do have a victim associated and could be included in the victim and witness reported crime category. In addition, this research has included crimes where the victim is recorded as an organisation in the CDCHI as well as crimes detected by companies or other organisations. Given the categories recommended by the Cambridge Consensus Statement, this feels the most suitable category for crimes where the victim is recorded as an organisation. However, it is at slight odds with the title of the series, 'Company-detected'. Therefore, for clarity, it is suggested that amending the nomenclature and definitions is considered. Where amendments are suggested, titles of the statistical series could be:

- Victim and Witness reported Crime Harm Index (VWCHI)
- (Victim and witness reported) Historical Offences Crime Harm Index (HOCHI)
- Company (or other organisation) Reported Crime Harm Index (CRCHI)
- Harm Detection Fraction of total (victim and witness reported) CHI (HDF)

It should also be noted that the lists relate to only crimes and crime detections for offence types where a crime case or crime outcome has been recorded by Devon and Cornwall Police during the five-year period considered in this research; it is therefore not an exhaustive list of all offence types. The ambiguity caused by the decision making as to which index an offence type belongs is acknowledged as a challenge of implementation within the Cambridge Consensus Statement; however, it is argued that "the perfect can become the enemy of the better" and that, even if imperfect, this is progress towards a much better way of counting crime (Sherman, 2020 p.12). As with the next steps following on from the efforts to fill gaps within the Cambridge-CHI look-up table, a level of ratification is required in relation to the offence types contained in each index.

Whilst not in scope of this research, the definition of an ‘offender outcome’ needs to be examined. In relation to outcomes/detections, this research included crimes where diversionary activity has been undertaken, which is not formally recognised or categorised as an ‘offender outcome’. This needs clarification to ensure adoption of this methodology provides reliable statistics that are consistent and comparable without encouraging perverse behaviours in the pursuit of statistics.

8.3 Findings from Application

This section will discuss the findings from the application of the methodology to Devon and Cornwall crime data. The discussion will be framed under each of the relevant statistical series.

8.3.1 Victim and Witness Reported Crime (In-Year)

The analysis has shown that the majority of crime recorded by Devon and Cornwall, in terms of pure count and when weighted by the Cambridge-CHI, falls into this categorisation. The trends show a step change during 2017/18 which coincides with the improved crime recording recognised by the Crime Data Inspection undertaken by HMICFRS (2018). Of particular interest is that the percentage-point increase in the proportion of crime that is reported (in-year committed) by victims and witnesses between 2015/16 and 2019/20 is equal for the count of crime and when weighted by CHI. However, the trends do differ, Particularly the decrease in crime count in 2019/20 amplifying the increasing divergence between crime count and harm-score. The ratio of harm-score per crime reported (in-year committed) by victims and witnesses and shows an increasing trend year-on-year. In 2019/20, for each individual crime case reported (in-year committed) by victims and witnesses there is an associated harm-score of 72; this equates to 11 days more imprisonment per crime in relation to the crimes recorded in 2019/20 compared to 2015/16. These results infer that in relation to crime reported (in-year committed) by victims and witnesses, Devon and Cornwall Police is managing increasing levels of harm. The increasing level of harm can be associated with increased complexity and demand for resources, both having increased associated costs.

It has been discussed that when the ONS publish the headline crime rates in relation to total recorded crime, these are reported and perceived as a measure of current public-safety. However, crimes within this category is a much clearer indicator of how safe people are in their community right now. In 2019/20, 76% of the total crime count relates to crime that is reported (in-year committed) by victims and witnesses; therefore it can be inferred that approximately a quarter of crime that the public think they are at risk of is not actually crime as they think it is.

8.3.2 Historic Offences Crime Harm Index (HOCHI)

Crimes committed in previous year(s) reported by victims and witnesses to Devon and Cornwall Police account for a small proportion of the count, 3.1% in 2019/20. However, when weighted by the Cambridge-CHI, such crimes accounted for 21% of the total harm-score; this is due to the fact that sexual offences make up 37% of the count and as they have a high score associated with them, make up 91% of the total harm-score in this category. The increasing trend in 2016/17 and 2017/18 is likely to be at least partially impacted by improved crime recording. Focussing on the most recent three years, whilst the count of crimes in this category has remained relatively stable, the harm-score has decreased slightly.

8.3.3 Proactive Policing (Crime Harm) Index (PPI)

The proportion of crimes recorded that can be said to be attributable to proactive policing and thus also not a measure of current public-safety accounted for a not insignificant 7% of the total count of recorded crime in 2019/20. The vast majority (92% of the count) of crimes in this category relate to the offence group Offences against society, therefore likely to be less impacted by improved recording. There is a more overt increase in the level of harm associated with crimes identified through proactive policing. In addition, as a percentage of the total harm-score (total crime), the percentage of harm-score associated with crimes identified through proactive policing is consistently one percentage-point higher than the percentage based on counts. Therefore it

can be inferred that in Devon and Cornwall, proactive policing is in the pursuit of harm. However, as discussed in the previous section, ratification of the crimes assigned to this index is required.

8.3.4 Company-Detected Crime Harm Index (CDCHI)

In 2019/20, crimes reported by companies and other organisations account for 14% of the total crime count, the lowest number and proportion in the five-year period analysed. When weighted by the Cambridge-CHI, these crimes account for less than one percent of the total harm-score. The extremely low percentage of harm as measured by the Cambridge-CHI does raise the issue of how much investment should be made into investigating such crimes. However, there are two key issues, the first being that businesses pay rates that contribute to the funding of police services, and secondly these crimes are not just those 'detected' by companies. Again ratification of the methodology is required as this research has included crimes where the victim is recorded as an organisation. This removes such crimes from the public-safety measure but again provides a level of ambiguity. The answer to the question regarding the level of investment in crimes within this category therefore cannot be answered with a blanket response. Each crime case should be considered on the level of threat, risk and harm as is current practice.

8.3.5 Detections

The offender outcome rate for total recorded crime equates to 14.7% (based on count) in 2019/20. Although this statistic is not advised to be used by the blueprint set out in the Cambridge Consensus Statement, it is provided for comparison purposes. Focussing only on crimes that are reported by victims and witnesses (in-year and previously), the offender outcome rate equates to 9.7% (based on count) in 2019/20. Trend data indicates a reduction in the number of 'detections' over the last five years but stabilising in 2019/20. A similar pattern is apparent when the number of 'detections' is weighted by the Cambridge-CHI (HDF) but stabilising in the last two years. This is replicated when presented as a rate, however, the pattern is amplified due to the improved crime recording impacting on the denominator in the calculation.

In 2019/20, one percentage-point of the detection-rate based on count equated to 1.3 percentage-points of the HDF. This ratio has remained relatively stable across the five-year period analysed; although there is no inter-force comparison available, this does infer that Devon and Cornwall Police are pursuing ‘detections’ in relation to harm rather than count. At offence group level, the ratio for Violence against the person equates to 2.2 percentage-points of the HDF for each percentage-point of the rate based on count. Conversely, the HDF in relation to sexual offences is lower than the rate based on count, this is an area that requires further understanding.

Focussing only on crimes committed in the year reported, therefore excluding historic offences increases the detection-rate based on count to 9.8% and the HDF to 13.5%, 0.1 and 1.3% percentage-point(s) respectively more than when historic crimes are included. This infers that a lower proportion of historic offences result in a ‘detection’ thus negatively impacting on the detection-rate and the HDF. This inference is strengthened when focussing on high-harm crime only (last 3 years) where the detection-rate and HDF are higher when only including ‘detections’ relating to crimes committed in the year reported.

8.4 Policy Implications

An example of how the media report crime statistics (Appendix 1) has been used to highlight the issue with regard to the current methodology where total recorded crime per 1,000 population is the measure of ‘where is the most dangerous place to live’. There is no context of what the offence types are. An extreme way of interpreting the information in the graphic is that someone has a 12.8% chance of having their bicycle stolen in the police force area deemed ‘most dangerous’ and a 5.6% chance of being murdered in the ‘least dangerous’ police force area; based on this interpretation, most people would probably choose to live in the area that is reported as being at the top of “the list of shame” (Daily Mail, 2020). But what about if, as a member of the public living in the ‘most dangerous’ police force area, you are not at risk of being a victim of crime at all. What if all the crimes recorded by that police force were identified through proactive policing and therefore keeping the communities safe from harm caused by crime?

Whilst this is probably the most extreme nuanced way to interpret the crime statistics presented in this example, it exemplifies the misleading nature of how crime statistics are currently reported. The methodology and recommendations set out by the Cambridge Consensus Statements, supported by this application, takes a significant step forward in mitigating the misleading nature of crime statistics.

This research set out to provide a 'proof of concept' for the blueprint for counting crime as set out by the Cambridge Consensus Statement. Applying the methodology to Devon and Cornwall crime data has provided new dimensions in crime statistics that do not get mentioned to this level of detail internally within policing and externally to the public. Do the statistical series exemplified in this research, alongside crime counts and 'detection-rates' measured and reported only by offence groups, add value to understanding public-safety and demand? The simple answer is yes, thus providing a more informed and transparent picture to the public; this is actually a more positive picture than current methods of reporting crime statistics encourage. The perceived current level of public-safety based on the count of total crime is nearly 25% higher than reality. The total crime rate for victim and witness reported crime (in-year) equates to 43.2 crimes per 1,000 population, substantially lower than the crime rate for total crime (57.0). These factors alone are positive contributions to public-confidence and legitimacy.

This research is not able to compare the statistical profiles of recorded crime and policing activity with those of other forces, not until it is replicated elsewhere. However, the results of the application infer that Devon and Cornwall Police is managing increasing levels of harm. As previously stated, the increasing level of harm can be associated with increased complexity and demand for resources, both having increased associated costs. This methodology for counting crime can provide the evidence-base to support the decision-making required to best allocate and utilise resources to have the highest impact. Particularly in relation to the PPI and HDF, the application "shows straight away that [Devon and Cornwall Police] have been pursuing harm with vengeance" (D. O'Connor, personal communication, April 21, 2021). Core to this is the cliché:

‘What gets measured gets done’. Quite simply, if we cannot or do not measure harm, there is a possibility that ‘harm’ is not at the forefront of police performance. Police Chiefs are accountable for how resources are allocated, and this will be of greater interest to evidence the impact of the current uplift in police officer numbers. The Cambridge Consensus Statement methodology shines a new light on crime statistics and can only be beneficial in evidencing the impact that the uplift has had.

Implementation of the methodology will not be without challenges. This research has already identified a number of challenges in the application. These include the need for an ‘official’ national harm-metric, completion of the Cambridge-CHI look-up table and ratification of the indexes developed by this research in relation to the PPI and CDCHI. There are other challenges. Whilst providing a more informative picture of crime statistics, there will need to be a level of educating the public to ‘shift’ the conversation away from the familiar total crime rates; there may be some cynicism that the police are ‘fudging the figures’. This is likely to be a longer-term issue and shouldn’t be a blocker to doing the right thing. Endorsement by the NPCC, APCC, HMICFRS, Home Office and media outlets would support the successful implementation. Media reporting of ‘where is the most dangerous place to live’ may change to ‘where is the most harmful place to live’. This research has discussed the comparison of the Cambridge-CHI and the CSS undertaken by Ashby (2017) and, exemplified by Devon and Cornwall Police, the potential for the position in a ‘league-table’ to be significantly impacted by the harm-metric used. There is a risk that police forces at the bottom of the ‘list of shame’, deemed to be the safest in England and Wales, may not be when crime statistics are presented as per the Cambridge Consensus Statement. However, the evidence presented by this research should not be overlooked in the pursuit of ‘good’ but misleading crime statistics.

This application supports a ‘tipping point’ for change, both in England and Wales and globally, in how crime statistics are reported; the methodology is transferable to any country and builds on the gaps identified in other countries developing their own CHI.

9. Conclusion

This research opened with the suggestion that counting is usually a simple process. In relation to counting crime, it can be and has been a simple process. But the Cambridge Consensus Statement and this application shows that it should not necessarily be that simple, especially if the result of the process is misleading and open to vast interpretation.

This research has considered the literature in relation to weighting crime to reflect the level of harm/severity/seriousness. Whilst the review of literature is overwhelmingly supportive of such a methodology, the solution is not there yet. Both the Cambridge-CHI and the ONS CSS require further development, which can only happen if one is agreed as the 'official' national metric. For reasons outlined in the review of literature and discussion chapter, it is recommended that the Cambridge-CHI provides the greatest potential as a metric for weighting crime. An identified weaknesses of the Cambridge-CHI is the fact that it is provides a partial look-up table. One of the side results of undertaking this research is that a considerable number of gaps in the Cambridge-CHI look-up table have been filled. Therefore, with a level of ratification applied, this weakness could be lessened. Furthermore, the task to produce a complete look-up table is potentially much more manageable now.

In developing the indexes required to categorise the CDCHI and PPI a number of definitional considerations have been identified which require ratification, clarification and potentially amendments to the nomenclature and definitions. However, whilst ambiguity exists, the results from the application are vital to measuring crime and policing activity particularly in the pursuit of harm. There is great potential, provided by this methodology, to improve

- how the public understand their current level of public-safety;
- the harm for which the police service should be credited for identifying; and

- the focus on ‘detecting’ high-harm crimes can only positively contribute to public-confidence and legitimacy of policing.

One of the key results is the inference that in relation to crime reported (in-year committed) by victims and witnesses, Devon and Cornwall Police is managing increasing levels of harm. The increasing level of harm can be associated with increased complexity and demand for resources, both having increased associated costs. This research has discussed how this methodology can assist police forces to understand demand and therefore make decisions on resource allocation and evidence the impact of the police officer uplift.

The research aimed to answer the over-arching key research question:

> Compared to the current method of counting, how does the crime and policing statistical profile for Devon and Cornwall, during 2015-20, differ when the method described in the Cambridge Consensus Statement is applied?

The results chapter has presented how the crime and policing statistical profile for Devon and Cornwall differs when the methodology set out in the Cambridge Consensus Statement is applied. However, the key point to emphasise is that the statistical profile *does* differ and provides a number of new dimensions and insight. Accepting that there is further development required to make the methodology as simple to implement as possible and at the least financial cost, this research concludes that, supported by this ‘proof of concept’, the blueprint outlined in the Cambridge Consensus Statement adds value and should be considered and discussed further.

As well as the development of the ‘mechanics’, this research has discussed some of the possible ‘cultural’ challenges to full implementation. However, it is hoped that this application provides support to the Cambridge Consensus Statement, providing an evidence-base for endorsement by all relevant and interested parties.

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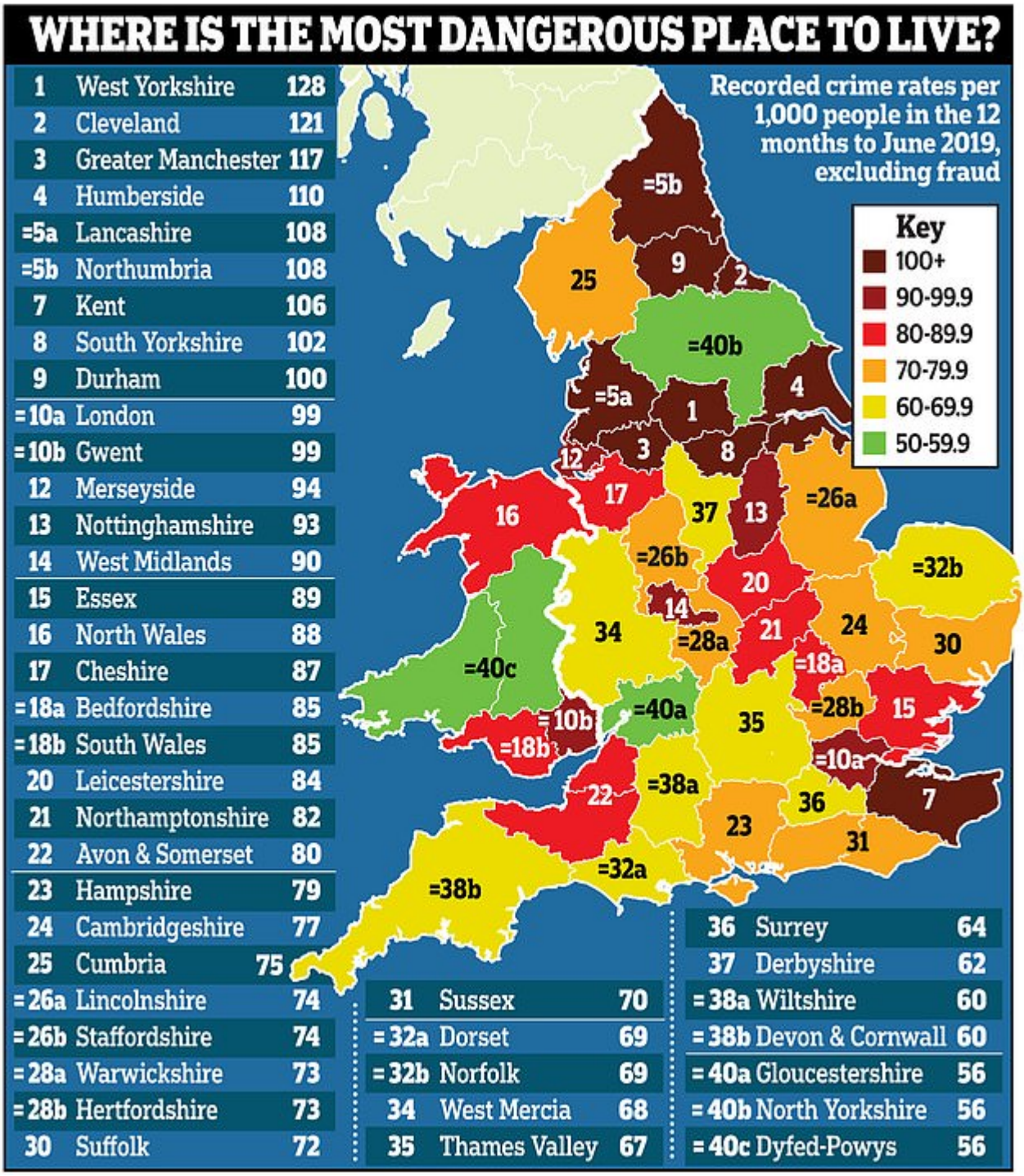
Appendices

List of Appendices

Appendix 1: Example of media reporting of crime statistics



(Daily Mail, 2020)

Appendix 2: Data Specification - Internal (Police held data) - Crime cases recorded

Source	QlikView 'Crime Lists' management information report Provides data in relation to the crime report	
Filters	[Entered Date]:	01/04/2015 – 31/03/2019
	[ONS Main Group]:	Exclude 'Non-Notifiable (Crimes)'
	[Offence Status]:	Exclude 'No Crime'

Variable (Police Data)	**Data Description and Reason for Extraction**
[Crime Ref]	Unique Reference Number - To match an identifier for crime cases reported by companies
[Offence Description]	Offence name (Text) - To enable manual look-up of CHI score if required and to identify offence types where the majority are reported by companies or other organisations
[ONS Main Group]	Offence group (Category) - To enable to categorisation of offence types
[ONS Sub Group]	Sub-offence group (Category) - To enable to categorisation of offence types
[Home Office Group]	Offence group (Numeric or alphanumeric code) - To enable the matching of CHI scores from external data source
[Home Office Code]	Sub-offence group (Numeric code) - To enable the matching of CHI scores from external data source
[Entered Date]	Date of recording crime case (Date) - To identify the reporting period of the crime
[Date Committed To]	End date of crime case being committed (Date) - To identify the crime cases committed in-year or in previous year(s)

Note on data extraction: Data for each performance year was downloaded separately to keep the file size and data processing manageable

Appendix 3: Data Specification - Internal (Police held data) - Crime outcomes recorded

Source	QlikView 'Crime Lists' management information report Provides data in relation to the crime report	
Filters	[Crime Disposal Date]:	01/04/2015 – 31/03/2019
	[ONS Main Group]:	Exclude 'Non-Notifiable (Crimes)'
	[Crime Disposal]:	Only disposals classed as an 'offender outcome'
	[Offence Status]:	Exclude 'No Crime'

Variable (Police Data)	Data Description and Reason for Extraction
[Crime Ref]	Unique Reference Number - To match an identifier for crime cases reported by companies
[Offence Description]	Offence name (Text) - To enable manual look-up of CHI score if required and to identify offence types where the majority are reported by companies or other organisations
[ONS Main Group]	Offence group (Category) - To enable to categorisation of offence types
[ONS Sub Group]	Sub-offence group (Category) - To enable to categorisation of offence types
[Home Office Group]	Offence group (Numeric or alphanumeric code) - To enable the matching of CHI scores from external data source
[Home Office Code]	Sub-offence group (Numeric code) - To enable the matching of CHI scores from external data source
[Entered Date]	Date of recording crime case (Date) - To identify the reporting period of the crime
[Date Committed To]	End date of crime case being committed (Date) - To identify the crime cases committed in-year or in previous year(s)
[Crime Disposal Year]	Performance year of recording crime outcome (Date - Year) - To identify the reporting period of the crime

Appendix 4: Data Specification - Internal (Police held data) - Crime cases reported by companies

Source	QlikView 'People' management information report Provides data in relation to people and organisations linked to a crime report	
Filters	[Entered Date]:	01/04/1991 – 31/03/2019
	[ONS Main Group]:	Exclude 'Non-Notifiable (Crimes)'
	[Per/Org Type]:	='Crime VICTIM'
	[Organisation]	='Yes'
	[Offence Status]:	Exclude 'No Crime'

Variable (Police Data)	**Data Description and Reason for Extraction**
[Crime Ref]	Unique Reference Number - To match as a generated identifier for crime cases reported by companies to crime case and crime outcome data-sets

Note on data extraction: To keep the file size and data processing manageable, data was downloaded in batches:
[Entered Date]: 01/04/2015 – 31/03/2019 (to match in to crime case and outcome data)
[Entered Date]: 01/04/2005 – 31/03/2015 (to also match in to crime outcome data)
[Entered Date]: 01/04/1991 – 31/03/2005 (to also match in to crime outcome data)

Appendix 5: Data Specification - External - Cambridge Crime Harm Index look-up table

Source	Cambridge Crime Harm Index Look-Up Table
Variable (External Data)	**Data Description and Reason for Extraction**
[FULL_OFFENCE_TITLE]	Offence name (Text) - To enable manual look-up of CHI score of similar offences if required due to missing values
[SHORT_TITLE]	Offence name (Text) - To enable manual look-up of CHI score of similar offences if required due to missing values
[CCHI Score]	Cambridge-CHI score (Numeric) – The variable to read into the police data sources (crime cases and crime outcomes)
[CLASSIFICATION_CODE]	Offence group (Numeric or alphanumeric code) - To enable the matching of CHI scores to police data (equivalent to [Home Office Group])
[HOME_OFFICE_CLASSIFICATION]	Sub-offence group (Numeric code) - To enable the matching of CHI scores to police data (equivalent to [Home Office Code])

https://www.cambridge-ebp.co.uk/crime-harm-index

Appendix 6: Offences identified through proactive policing (in the majority of cases)

[ONS Main Group]	[Offence Description]
Drug Offences	
	ASSIST IN THE COMMISSION OF A DRUG OFFENCE OUTSIDE THE UNITED KINGDOM
	ATTEMPT TO POSSESS A CONTROLLED DRUG OF CLASS A - MDMA
	ATTEMPT TO POSSESS A CONTROLLED DRUG OF CLASS A - OTHER
	ATTEMPT TO POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - HEROIN
	ATTEMPT TO POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - OTHER
	CONCERNED IN MAKING OF AN OFFER TO SUPPLY TO ANOTHER A CONTROLLED DRUG OF CLASS B - CANNABIS
	CONCERNED IN OFFER TO SUPPLY A CLASS C DRUG - OTHER
	CONCERNED IN OFFER TO SUPPLY METHYLAMPHETAMINE A CLASS A CONTROLLED DRUG
	CONCERNED IN PRODUCTION BY ANOTHER OF A CONTROLLED DRUG OF CLASS B - CANNABIS RESIN
	CONCERNED IN PRODUCTION OF A CLASS A DRUG - OTHER
	CONCERNED IN PRODUCTION OF A CLASS B DRUG - OTHER
	CONCERNED IN PRODUCTION OF CANNABIS - CLASS C
	CONCERNED IN PRODUCTION OF CRACK COCAINE
	CONCERNED IN PRODUCTION OF METHYLAMPHETAMINE A CLASS A CONTROLLED DRUG
	CONCERNED IN SUPPLY OF COCAINE
	CONCERNED IN SUPPLY OF HEROIN
	CONCERNED IN THE FRAUDULENT EVASION OF A PROHIBITION ON THE IMPORTATION OF A CLASS A DRUG
	CONCERNED IN THE SUPPLY KETAMINE
	CONCERNED IN THE SUPPLY OF A CLASS A DRUG - OTHER
	CONCERNED IN THE SUPPLY OF AMPHETAMINE
	CONCERNED IN THE SUPPLY OF CRACK COCAINE
	CONCERNED IN THE SUPPLY OF ECSTASY
	CONSPIRE TO IMPORT/EXPORT A CONTROLLED DRUG OF CLASS C WITH INTENT TO EVADE A PROHIBITION / RESTRICTION
	CONSPIRE TO SUPPLY A CLASS B CONTROLLED DRUG - OTHER
	IMPORT A PSYCHOACTIVE SUBSTANCE
	MONEY LAUNDERING - FAIL TO DISCLOSE INFORMATION REGARDING DRUGS
	OBSTRUCT A PC IN EXERCISE OF A S. 23A(6) POWER TO DETAIN / SEARCH A PERSON / VEHICLE / VESSEL RE TEMPORARY CLASS DRUGS
	OBSTRUCT AN AUTHORISED PERSON IN EXERCISE OF A SECTION 23 POWER TO DETAIN / SEARCH A PERSON / VEHICLE / VESSEL RE DRUGS
	OFFER TO SUPPLY A CONTROLLED DRUG OF CLASS B - CATHINONE DERIVATIVE
	OFFER TO SUPPLY ARTICLE TO ADMINISTER CONTROLLED DRUG
	OFFER TO SUPPLY LSD
	PERMIT USE OF PREMISES FOR SMOKING OF A CONTROLLED DRUG OF CLASS B - CANNABIS / CANNABIS RESIN
	PERMIT USE OF PREMISES FOR SUPPLY - CLASS B DRUG
	PERMIT USE OF PREMISES FOR SUPPLY - HEROIN
	PERMIT USE OF PREMISES FOR SUPPLY OF A CONTROLLED DRUG OF CLASS C - OTHER
	POSSESS A CLASS C CONTROLLED DRUG
	POSSESS A CLASS C CONTROLLED DRUG - ANABOLIC STEROIDS
	POSSESS A CLASS C CONTROLLED DRUG - KHAT
	POSSESS A CONTROLLED DRUG OF CLASS A - COCAINE
	POSSESS A CONTROLLED DRUG OF CLASS A - CRACK COCAINE
	POSSESS A CONTROLLED DRUG OF CLASS A - HEROIN
	POSSESS A CONTROLLED DRUG OF CLASS A - LSD
	POSSESS A CONTROLLED DRUG OF CLASS A - METHADONE
	POSSESS A CONTROLLED DRUG OF CLASS B - AMPHETAMINE
	POSSESS A CONTROLLED DRUG OF CLASS B - CANNABINOID RECEPTOR AGONISTS
	POSSESS A CONTROLLED DRUG OF CLASS B - CANNABIS / CANNABIS RESIN
	POSSESS A CONTROLLED DRUG OF CLASS B - CATHINONE DERIVATIVE
	POSSESS A CONTROLLED DRUG OF CLASS B - KETAMINE
	POSSESS A CONTROLLED DRUG OF CLASS B - OTHER
	POSSESS A CONTROLLED DRUG OF CLASS C - 1-BENZYLPIPERAZINE (BZP)
	POSSESS A CONTROLLED DRUG OF CLASS C - GHB
	POSSESS A PSYCHOACTIVE SUBSTANCE IN A CUSTODIAL INSTITUTION
	POSSESS A PSYCHOACTIVE SUBSTANCE WITH INTENT TO SUPPLY
	POSSESS CANNABIS RESIN - CLASS C
	POSSESS METHYLAMPHETAMINE A CLASS A CONTROLLED DRUG
	POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - COCAINE

POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - CRACK COCAINE
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - LSD
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - MDMA
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - METHADONE
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS A - METHYLAMPHETAMINE
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS B - AMPHETAMINE
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS B - CANNABINOID RECEPTOR AGONISTS
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS B - CANNABIS
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS B - OTHER
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS C - 1-BENZYLPIPERAZINE (BZP)
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS C - ANABOLIC STEROIDS
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS C - KETAMINE
POSSESS WITH INTENT TO SUPPLY A CONTROLLED DRUG OF CLASS C - OTHER
POSSESS WITH INTENT TO SUPPLY A DRUG SUBJECT OF A TEMPORARY CLASS DRUG ORDER
POSSESS WITH INTENT TO SUPPLY CANNABIS
PRODUCE A CLASS C CONTROLLED DRUG
PRODUCE MDMA / ECSTASY
SUPPLY A CONTROLLED DRUG OF CLASS B - CANNABINOID RECEPTOR AGONISTS
SUPPLY A PSYCHOACTIVE SUBSTANCE
SUPPLY CANNABIS A CLASS C CONTROLLED DRUG (PRE FEB 2004)

Other Crimes Against Society

AID / ABET THE SUICIDE OF ANOTHER
ASSISTING OFFENDER - EITHER WAY OFFENCES ONLY
ASSISTING OFFENDER - INDICTABLE OFFENCE (EXCEPT MURDER)
ATTEMPT TO ESCAPE FROM LAWFUL CUSTODY
ATTEMPT TO POSSESS AN INDECENT PHOTOGRAPH / PSEUDO-PHOTOGRAPH OF A CHILD
BREACH OF PRE-CHARGE BAIL CONDITIONS RELATING TO TRAVEL
CAUSE / INCITE PROSTITUTION FOR GAIN - SOA 2003
COMMIT AN ACT / SERIES OF ACTS WITH INTENT TO PERVERT THE COURSE OF PUBLIC JUSTICE
CONCEAL / DISGUISE / CONVERT / TRANSFER / REMOVE CRIMINAL PROPERTY
CONTROL PROSTITUTION FOR GAIN - SOA 2003
CUSTODY / CONTROL A THING KNOWING IT WAS A COUNTERFEIT CURRENCY NOTE - FORGERY AND COUNTERFEITING ACT 1981
DISCLOSE DETAILS OF SECTION 49 NOTICE - RIPA
DO AN ACT TO FACILITATE THE COMMISSION OF A BREACH OF UK IMMIGRATION LAW BY A NON EU PERSON
DRIVE A MOTOR VEHICLE DANGEROUSLY
EMPLOY ADULT SUBJECT TO CONTROL WHO HAD NOT BEEN GRANTED LEAVE TO ENTER / REMAIN IN UK
EMPLOYER / SELF-EMPLOYED PERSON BREACH GENERAL DUTY TO OTHER THAN EMPLOYEE
ENCOURAGE / ASSIST IN THE COMMISSION OF AN INDICTABLE ONLY OFFENCE - SERIOUS CRIME ACT 2007
ENGAGE IN ACTIVITY REQUIRING A LICENCE WHEN NOT A LICENSEE
ENTER INTO / CONCERNED IN ACQUISITION / RETENTION / USE OR CONTROL CRIMINAL PROPERTY
ENTER UNITED KINGDOM WITHOUT A PASSPORT
FAIL TO COMPLY A DIRECTION MADE UNDER REGULATION 18 OF THE MONEY LAUNDERING REGULATIONS 2007
FAIL TO COMPLY WITH A SECTION 49 NOTICE TO DISCLOSE THE KEY TO PROTECTED INFORMATION
FAIL TO CO-OPERATE WITH A PRELIMINARY TEST - MOTOR VEHICLE OFFENCE
GOING EQUIPPED FOR BURGLARY
HANDLE STOLEN GOODS
HAVE ARTICLE WITH INTENT TO DESTROY / DAMAGE PROPERTY
HAVE ARTICLE WITH INTENT TO DESTROY / DAMAGE PROPERTY - ENDANGER LIFE
HAVE CUSTODY / CONTROL OF THING DESIGNED TO MAKE COUNTERFEIT NOTE - FORGERY AND COUNTERFEITING ACT 1981
INTENTIONALLY ENCOURAGE / ASSIST THE COMMISSION OF AN EITHER WAY OFFENCE - SERIOUS CRIME ACT 2007
KEEP / MANAGE A BROTHEL USED FOR PROSTITUTION
MAKE A FALSE STATEMENT TO OBTAIN INSURANCE
MAKE EXPLOSIVE SUBSTANCE FOR UNLAWFUL PURPOSE
POSSESS / CONTROL A FALSE / IMPROPERLY OBTAINED / ANOTHER PERSONS IDENTITY DOCUMENT
POSSESS / CONTROL ARTICLE FOR USE IN FRAUD - FRAUD ACT 2006
POSSESS / CONTROL IDENTITY DOCUMENTS WITH INTENT
POSSESS A PROHIBITED IMAGE OF A CHILD
POSSESS AN EXTREME PORNOGRAPHIC IMAGE PORTRAYING AN ACT WHICH THREATENED LIFE
POSSESS DRIVING LICENCE / COUNTERPART WITH INTENT TO DECEIVE
POSSESS EXTREME PORNOGRAPHIC IMAGE PORTRAYING ACT WHICH INVOLVED SEXUAL INTERFERENCE WITH A CORPSE
POSSESS EXTREME PORNOGRAPHIC IMAGE PORTRAYING ACT WHICH LIKELY TO RESULT IN SERIOUS INJURY TO A PERSON'S PRIVATE PARTS

POSSESS EXTREME PORNOGRAPHIC IMAGE PORTRAYING AN ACT OF INTERCOURSE / ORAL SEX WITH A DEAD / ALIVE ANIMAL
PROCEEDS OF CRIME - FAIL TO DISCLOSE IN REGULATED SECTOR - MONEY LAUNDER
PROCEEDS OF CRIME - NOMINATED OFFICER CONSENTS TO PROHIBITED ACT
PROCEEDS OF CRIME - OTHER NOMINATED PERSON FAIL TO DISCLOSE IN REGULATED SECTOR - MONEY LAUNDER
PROCEEDS OF CRIME ACT - NOMINATED PERSON FAIL TO DISCLOSE IN REGULATED SECTOR - MONEY LAUNDER
RECEIVING STOLEN GOODS
SEEK / OBTAIN LEAVE TO ENTER / REMAIN IN UK BY DECEPTIVE MEANS - IMMIGRATION
TIPPING OFF - REGULATED SECTOR - PROCEEDS OF CRIME ACT 2002

Possession of Weapons

AIR WEAPON - POSSESSION WITH INTENT TO CAUSE FEAR OF VIOLENCE
FALSIFY CERTIFICATE TO ACQUIRE / PURCHASE SHOTGUN
HAVE AN IMITATION FIREARM WITH INTENT TO COMMIT AN INDICTABLE OFFENCE
IMPORT / ACQUIRE / POSSESS / USE A REGULATED EXPLOSIVES PRECURSOR WITHOUT A LICENCE
POSSESS A FIREARM OF LENGTH LESS THAN 30CM / 60CM - PROHIBITED WEAPON
POSSESS A FIREARM WHEN PROHIBITED FOR FIVE YEARS
POSSESS A FIREARM WITH INTENT TO CAUSE FEAR OF VIOLENCE
POSSESS A FIREARM WITHOUT A CERTIFICATE
POSSESS A LOADED SHOTGUN IN A PUBLIC PLACE
POSSESS A PROHIBITED FIREARM
POSSESS A SHOTGUN WHEN PROHIBITED FOR LIFE
POSSESS A WEAPON FOR THE DISCHARGE OF A NOXIOUS LIQUID / GAS / ELECTRICAL INCAPACITATION DEVICE / THING
POSSESS AIR WEAPON WHILE COMMITTING SCHEDULE 1 OFFENCE
POSSESS AN AIR WEAPON WHEN PROHIBITED FOR LIFE
POSSESS AN IMITATION FIREARM IN A PUBLIC PLACE - FIREARMS ACT 1968
POSSESS AN OFFENSIVE WEAPON IN A PUBLIC PLACE
POSSESS ARTICLE WITH BLADE / SHARPLY POINTED ARTICLE ON SCHOOL PREMISES
POSSESS EXPANDING AMMUNITION - MILITARY EQUIPMENT
POSSESS FOR SALE ETC FIREARM - NOT REGISTERED DEALER
POSSESS FOR SALE ETC SHOTGUN - NOT REGISTERED DEALER
POSSESS IMITATION FIREARM - COMMITTING SCHEDULE 1 OFFENCE
POSSESS KNIFE BLADE / SHARP POINTED ARTICLE IN A PUBLIC PLACE - CRIMINAL JUSTICE ACT 1988
POSSESS LOADED / UNLOADED FIREARM AND SUITABLE AMMUNITION IN PUBLIC PLACE
POSSESS OFFENSIVE WEAPON ON SCHOOL PREMISES
POSSESS PROHIBITED WEAPON (DISGUISED FIREARM)
POSSESS PROHIBITED WEAPON / AMMUNITION FOR SALE / TRANSFER
POSSESS SHOTGUN WITHOUT A CERTIFICATE

Public Order Offences

BOMB HOAX - COMMUNICATE FALSE INFORMATION
BOMB HOAX - DISPATCH ARTICLE
BREACH A CRIMINAL BEHAVIOUR ORDER
BREACH A FORCED MARRIAGE PROTECTION ORDER
BREACH A NON-MOLESTATION ORDER - FAMILY LAW ACT 1996
BREACH A SEX OFFENDER ORDER / INTERIM ORDER MADE UNDER THE CRIMINAL JUSTICE (NORTHERN IRELAND) ORDER 1998
BREACH A SEXUAL RISK ORDER / RISK OF SEXUAL HARM ORDER ETC
BREACH OF AN ANTI-SOCIAL BEHAVIOUR ORDER
BREACH SHPO / INTERIM SHPO / SOPO / INTERIM SOPO / FOREIGN TRAVEL ORDER
BREACHING RISK OF SEXUAL HARM ORDER - SOA 2003
CAUSE A PUBLIC NUISANCE
DISTRIBUTE / CIRCULATE A TERRORIST PUBLICATION - TERRORISM ACT 2006
ENGAGE IN CONDUCT IN PREPARATION FOR TERRORIST ACTS - TERRORISM
FAIL COMPLY WITH A PROHIBITION / RESTRICTION / CONDITION CONTAINED IN A VIOLENT OFFENDER ORDER / INTERIM ORDER
FAIL COMPLY WITH INITIAL NOTIFICATION REQUIREMENT RE A VIOLENT OFFENDER ORDER / INTERIM ORDER
POSSESS A DOCUMENT CONTAINING INFORMATION USEFUL TO TERRORISM
SEX OFFENDERS REGISTER - FAIL COMPLY WITH NOTIFICATION REQUIREMENTS - SOA 2003
SEX OFFENDERS REGISTER - SUPPLY FALSE INFORMATION IN PURPORTED COMPLIANCE WITH A NOTIFICATION REQUIREMENT

Sexual Offences

SEX OFFENDER FAIL TO NOTIFY NAME ETC TO POLICE SUBSEQUENT TO REGISTRATION
TRAFFICKING PERSONS INTO THE UNITED KINGDOM FOR SEXUAL EXPLOITATION - SOA 2003
TRAFFICKING PERSONS WITHIN THE UNITED KINGDOM FOR SEXUAL EXPLOITATION - SOA 2003

Violence Against the Person

ARRANGE OR FACILITATE TRAVEL OF ANOTHER PERSON WITH A VIEW TO EXPLOITATION
ASSAULT A CONSTABLE IN THE EXECUTION OF HIS / HER DUTY

ASSAULT DESIGNATED / ACCREDITED PERSON - POLICE REFORM ACT 2002
ASSAULT PERSON ASSISTING CONSTABLE IN EXECUTION OF DUTY
ASSAULT WITH INTENT TO RESIST ARREST
ASSISTING OFFENDER (MURDER ONLY)
ATTEMPT TO BREACH A RESTRAINING ORDER AFTER CONVICTION
ATTEMPT TO TAKE A CHILD SO AS TO REMOVE HIM / HER FROM A PERSON HAVING LAWFUL CONTROL
COMMIT OFFENCE OF KIDNAPPING OR FALSE IMPRISONMENT WITH INTENTION OF COMMITTING HUMAN TRAFFICKING OFFENCE
COMMIT OFFENCE OTHER THAN KIDNAPPING OR FALSE IMPRISONMENT WITH INTENT TO COMMIT HUMAN TRAFFICKING OFFENCE
HARASSMENT - BREACH OF A RESTRAINING ORDER ON CONVICTION
HARASSMENT - BREACH OF CIVIL INJUNCTION
HOLD PERSON IN SLAVERY OR SERVITUDE
INTENTIONALLY ARRANGE / FACILITATE ENTRY INTO UK / OTHER COUNTRY OF A PERSON WITH A VIEW TO THEIR EXPLOITATION
KNOWINGLY HOLD ANOTHER PERSON IN SLAVERY / SERVITUDE
MAKE USE / ATTEMPT TO MAKE USE OF A FIREARM WITH INTENT TO RESIST ARREST
MASTER / PILOT / SEAMAN - ON DUTY - ALCOHOL IN BREATH / BLOOD / URINE ABOVE PRESCRIBED LIMIT - TRANSPORT SAFETY
REQUIRE PERSON TO PERFORM FORCED OR COMPULSORY LABOUR
RESIST / OBSTRUCT DESIGNATED / ACCREDITED PERSON - POLICE REFORM ACT 2002
RESIST / OBSTRUCT ENFORCEMENT OFFICER / PERSON ACTING FOR ENGAGED TO EXECUTE HIGH COURT WRIT - CRIMINAL LAW ACT 1977

Appendix 7: Offences reported by companies and other organisations (in the majority of cases)

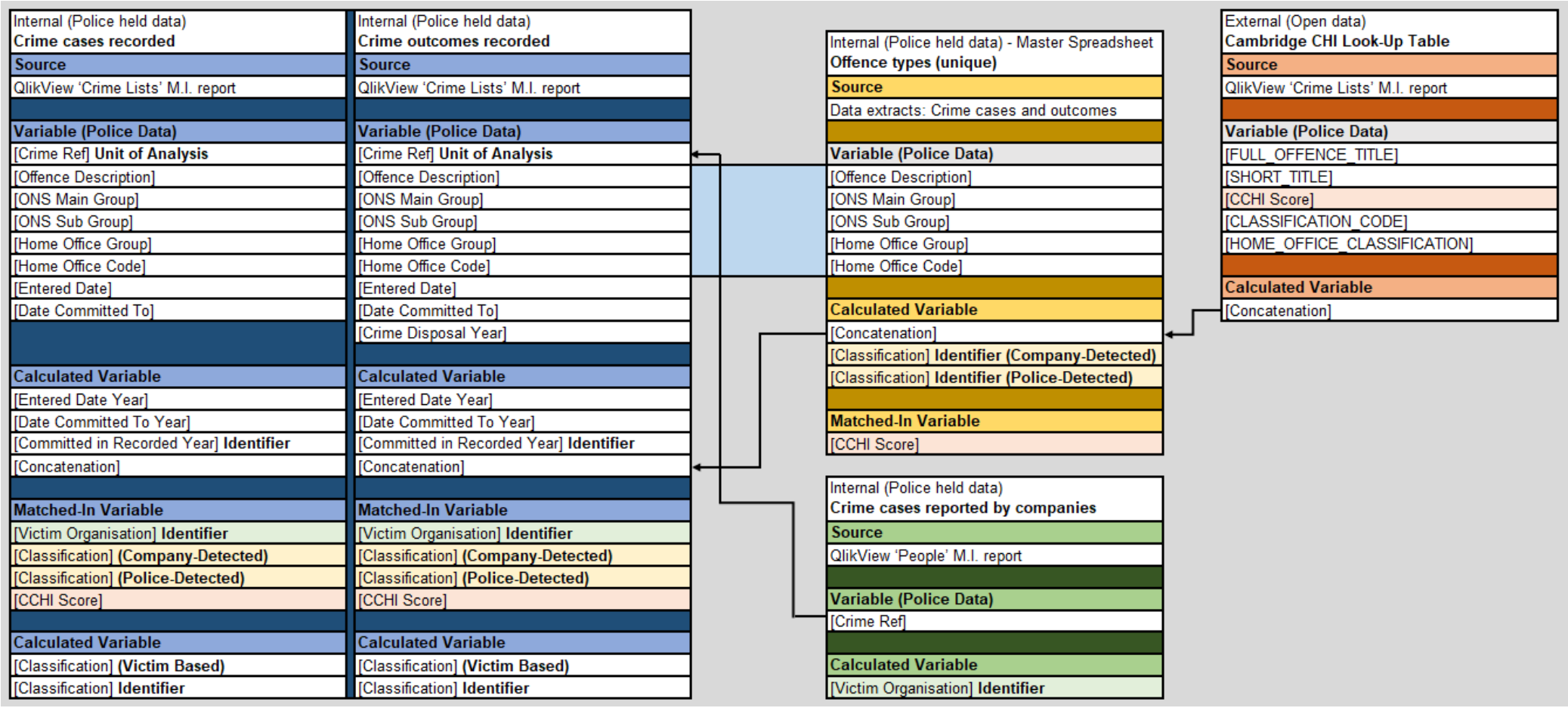
[ONS Main Group]	[Offence Description]
Drug Offences	
	EVADE PROHIBITION / RESTRICTION ON THE EXPORTING OF CLASS B DRUG
	IMPROPER IMPORTATION OF GOODS - CONTROLLED DRUG OF CLASS C INTO THE UNITED KINGDOM
Other Crimes Against Society	
	ALTER INSURANCE DOCUMENTS WITH INTENT TO DECEIVE
	ATTEMPT TO BRING / THROW / CONVEY LIST ' A ' PROHIBITED ARTICLE INTO / OUT OF A PRISON ON BEHALF OF A PRISONER
	BRING / THROW / CONVEY A LIST ' B ' PROHIBITED ARTICLE INTO / OUT OF A PRISON - PRISON ACT 1952
	CHEAT AT GAMBLING - GAMBLING ACT 2005
	CONCEALMENT OF THE BIRTH OF A CHILD
	CONTAMINATE / INTERFERE WITH GOODS WITH INTENT
	CONTRAVENE A DISQUALIFICATION ORDER / UNDERTAKING MADE UNDER COMPANY DIRECTORS DISQUALIFICATION ACT 1986
	DISTRIBUTE ARTICLE INFRINGING COPYRIGHT
	ENGAGE / SOUGHT / OFFERED TO ENGAGE IN REGULATED ACTIVITY FROM WHICH BARRED - SAFEGUARDING VULNERABLE GROUPS ACT 2006
	FALSE ACCOUNTING
	HOLDER OF A PUBLIC OFFICE WILFULLY NEGLECTED TO PERFORM DUTY / WILFULLY MISCONDUCTED HIMSELF / HERSELF
	HOSPITAL / CARE HOME STAFF ILL-TREATING PATIENT
	IMPORT / EXPORT GOODS WITH INTENT TO EVADE PROHIBITION / RESTRICTION
	INTENTIONALLY DISCLOSE JURY'S DELIBERATIONS
	KNOWINGLY CONCERNED IN FRAUDULENT EVASION OF PROHIBITION / RESTRICTION ON A WEAPON / AMMUNITION
	MAKE A FALSE INSTRUMENT WITH INTENT IT BE ACCEPTED AS GENUINE - FORGERY AND COUNTERFEITING ACT 1981
	MAKE A FALSE PRESCRIPTION FOR A SCHEDULED DRUG - FORGERY AND COUNTERFEITING ACT 1981
	MAKE A FALSE STATEMENT TO OBTAIN A DRIVING LICENCE
	MEMBER OF A JURY CARRY OUT RESEARCH DURING THE TRIAL PERIOD
	OBTAIN / DISCLOSE PERSONAL DATA / INFORMATION CONTAINED THEREIN
	PARTICIPATE IN A PRISON MUTINY
	PASS AS GENUINE A THING KNOWING IT WAS A COUNTERFEIT OF A CURRENCY NOTE - FORGERY AND COUNTERFEITING ACT 1981
	PROHIBITED SALE OF A SPECIMEN COVERED BY THE CONTROL OF TRADE IN ENDANGERED SPECIES REGULATIONS
	PUBLISH AN OBSCENE ARTICLE
	RECKLESSLY / NEGLIGENTLY ACT IN MANNER LIKELY TO ENDANGER AIRCRAFT / PERSON IN AN AIRCRAFT
	RECKLESSLY / NEGLIGENTLY ACT IN MANNER LIKELY TO ENDANGER AN AIRCRAFT / PERSON IN AN AIRCRAFT
	RELEASE INTO THE WILD A SCHEDULE 9 PART 1 ANIMAL
	REMAIN UNLAWFULLY AT LARGE AFTER RECALL TO PRISON - CRIMINAL JUSTICE ACT 2003
	REQUEST / AGREE TO RECEIVE / ACCEPT A FINANCIAL / OTHER ADVANTAGE INTENDING TO PERFORM IMPROPERLY A FUNCTION / ACTIVITY
	SELL GOODS WITH SIGN / PACKAGING BEARING A SIGN IDENTICAL / LIKELY TO BE MISTAKEN FOR REGISTERED TRADE MARK
	TAMPER WITH/DAMAGE/REMOVE ANY PART OF VESSEL LYING WRECKED ON/IN THE SEA BED/OBJECT FROM VESSEL
	THROW AN ARTICLE / SUBSTANCE INTO A PRISON
	UNAUTHORISED POSSESSION IN PRISON OF KNIFE OR OFFENSIVE WEAPON
	USE A FALSE PRESCRIPTION FOR A SCHEDULED DRUG WITH INTENT - FORGERY AND COUNTERFEITING ACT 1981
	WILFULLY MADE A FALSE STATEMENT IN JUDICIAL PROCEEDINGS - WITNESS / INTERPRETER
	WILFULLY MADE A FALSE STATEMENT ON OATH - NOT IN JUDICIAL PROCEEDINGS
	WITHOUT AUTHORITY POSSESS INSIDE A PRISON AN ITEM SPECIFIED IN SECTION 40D(3B)
	WITHOUT AUTHORITY TAKE A PHOTOGRAPH / MAKE A SOUND-RECORDING INSIDE A PRISON - PRISON ACT 1952
Possession of Weapons	
	IMPORT PROHIBITED WEAPON / AMMUNITION WITH INTENT TO EVADE PROHIBITION / RESTRICTION
	IMPORT PROHIBITED WEAPONS / AMMUNITION WITH INTENT TO EVADE A PROHIBITION / RESTRICTION
	PURCHASE / ACQUIRE PROHIBITED WEAPON / AMMUNITION FOR SALE / TRANSFER
	THREATEN A PERSON WITH A BLADE / SHARPLY POINTED ARTICLE ON SCHOOL PREMISES
	THREATEN A PERSON WITH AN OFFENSIVE WEAPON ON SCHOOL PREMISES
	USE ANOTHER TO LOOK AFTER / HIDE / TRANSPORT AN OFFENSIVE WEAPON / KNIFE / BLADE - VIOLENT CRIME REDUCTION ACT 2006
Theft Offences	
	ATTEMPT THEFT BY EMPLOYEE
	ATTEMPT THEFT FROM SHOP
	MAKE OFF WITHOUT MAKING PAYMENT
	REMOVE ARTICLE FROM PUBLIC BUILDING / GROUNDS
Violence Against the Person	
	ASSAULT / ILL-TREAT / NEGLECT / ABANDON A CHILD / YOUNG PERSON TO CAUSE UNNECESSARY SUFFERING / INJURY
	ASSAULT PRISONER CUSTODY OFFICER - CONTRACTED OUT PRISON

CARE PROVIDER BREACH DUTY OF CARE RESULTING IN ILL-TREATMENT / NEGLECT OF INDIVIDUAL
CARE WORKER ILL-TREAT / WILFULLY NEGLECT AN INDIVIDUAL
CARER ILL-TREAT / WILFULLY NEGLECT A PERSON WITHOUT CAPACITY - MENTAL CAPACITY ACT 2005
CAUSE / ALLOW A CHILD / VULNERABLE ADULT TO SUFFER SERIOUS PHYSICAL HARM
ENDANGERING AIRCRAFT - AVIATION SECURITY ACT 1982
RESIST / WILFULLY OBSTRUCT PRISONER CUSTODY OFFICER - DIRECTLY MANAGED PRISON
THROW STONE / WOOD / THING AT TRAIN WITH INTENT TO ENDANGER

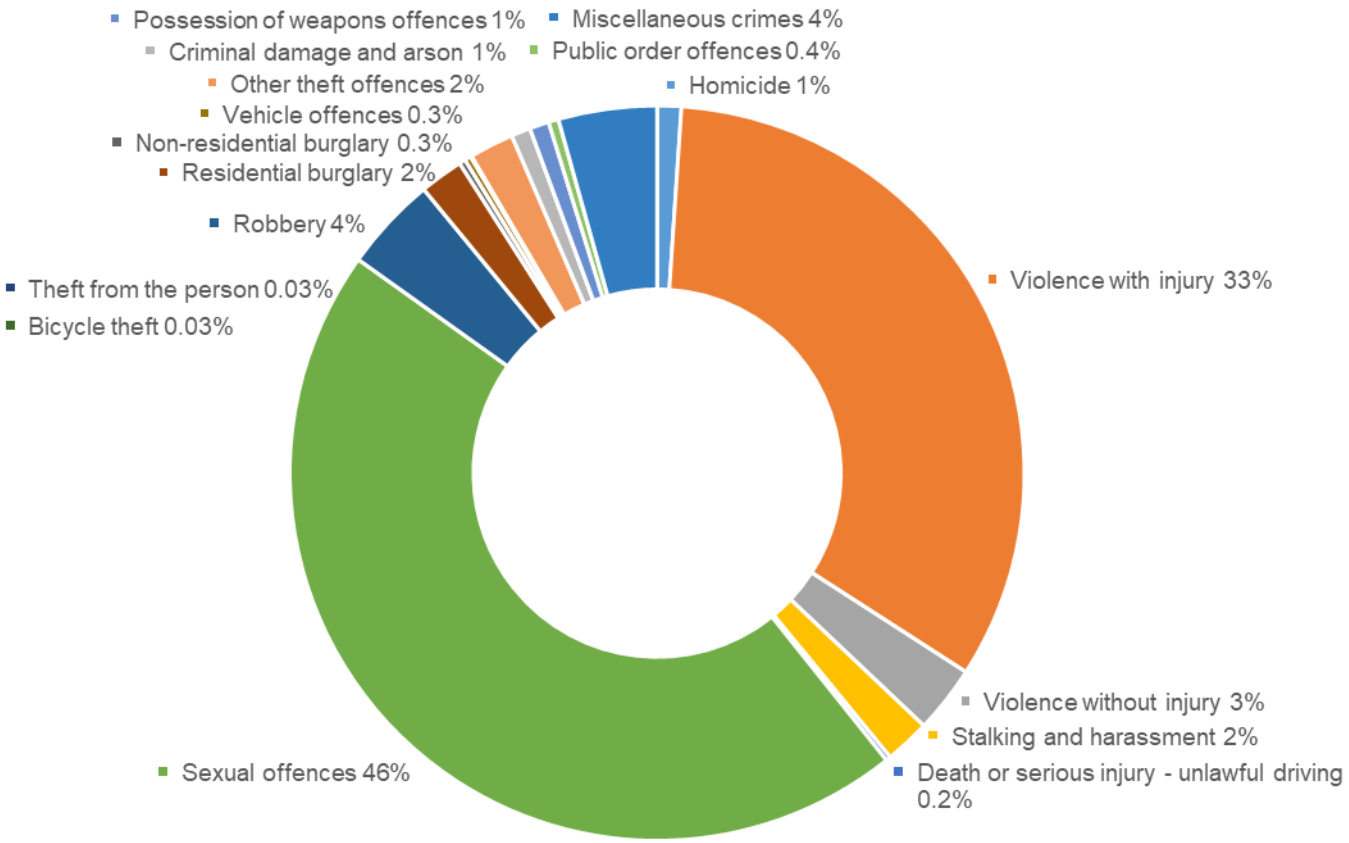
Appendix 8: Offence types recorded by Devon and Cornwall Police for which a Cambridge-CHI score cannot be assigned

[ONS Main Group]	[Offence Description]
Drug Offences	
	ASSIST IN THE COMMISSION OF A DRUG OFFENCE OUTSIDE THE UNITED KINGDOM
Other Crimes Against Society	
	CHEAT AT GAMBLING - GAMBLING ACT 2005
	CONTRAVENE A DISQUALIFICATION ORDER / UNDERTAKING MADE UNDER COMPANY DIRECTORS DISQUALIFICATION ACT 1986
	DISCLOSE DETAILS OF SECTION 49 NOTICE - RIPA
	DISTRIBUTE ARTICLE INFRINGING COPYRIGHT
	EMPLOY ADULT SUBJECT TO CONTROL WHO HAD NOT BEEN GRANTED LEAVE TO ENTER / REMAIN IN UK
	EMPLOYER / SELF-EMPLOYED PERSON BREACH GENERAL DUTY TO OTHER THAN EMPLOYEE
	ENGAGE IN ACTIVITY REQUIRING A LICENCE WHEN NOT A LICENSEE
	ENTER UNITED KINGDOM WITHOUT A PASSPORT
	FAIL TO COMPLY WITH A SECTION 49 NOTICE TO DISCLOSE THE KEY TO PROTECTED INFORMATION
	HOSPITAL / CARE HOME STAFF ILL-TREATING PATIENT
	INTENTIONALLY / RECKLESSLY REMOVE A HEDGEROW IN CONTRAVENTION OF REGULATION 5(1) / 5(9)
	MAKE USE / ATTEMPT TO MAKE USE OF A FIREARM WITH INTENT TO RESIST ARREST
	MASTER / PILOT / SEAMAN - ON DUTY - ALCOHOL IN BREATH / BLOOD / URINE ABOVE PRESCRIBED LIMIT - TRANSPORT SAFETY
	MISCONDUCT OF MASTER / CREW LIKELY TO ENDANGER SHIPS / STRUCTURES / INDIVIDUALS
	POSTAL SERVICE - SEND CREATURE / ARTICLE / THING BY POST
	PUBLISH AN OBSCENE ARTICLE
	REQUEST / AGREE TO RECEIVE / ACCEPT A FINANCIAL / OTHER ADVANTAGE INTENDING TO PERFORM IMPROPERLY A FUNCTION / ACTIVITY
	SEEK / OBTAIN LEAVE TO ENTER / REMAIN IN UK BY DECEPTIVE MEANS - IMMIGRATION
	SELL GOODS WITH SIGN / PACKAGING BEARING A SIGN IDENTICAL / LIKELY TO BE MISTAKEN FOR REGISTERED TRADE MARK
	TAMPER WITH/DAMAGE/REMOVE ANY PART OF VESSEL LYING WRECKED ON/IN THE SEA BED/OBJECT FROM VESSEL
Possession of Weapons	
	FALSIFY CERTIFICATE TO ACQUIRE / PURCHASE SHOTGUN
	POSSESS FOR SALE ETC FIREARM - NOT REGISTERED DEALER
	POSSESS FOR SALE ETC SHOTGUN - NOT REGISTERED DEALER
Violence Against the Person	
	ENDANGERING AIRCRAFT - AVIATION SECURITY ACT 1982

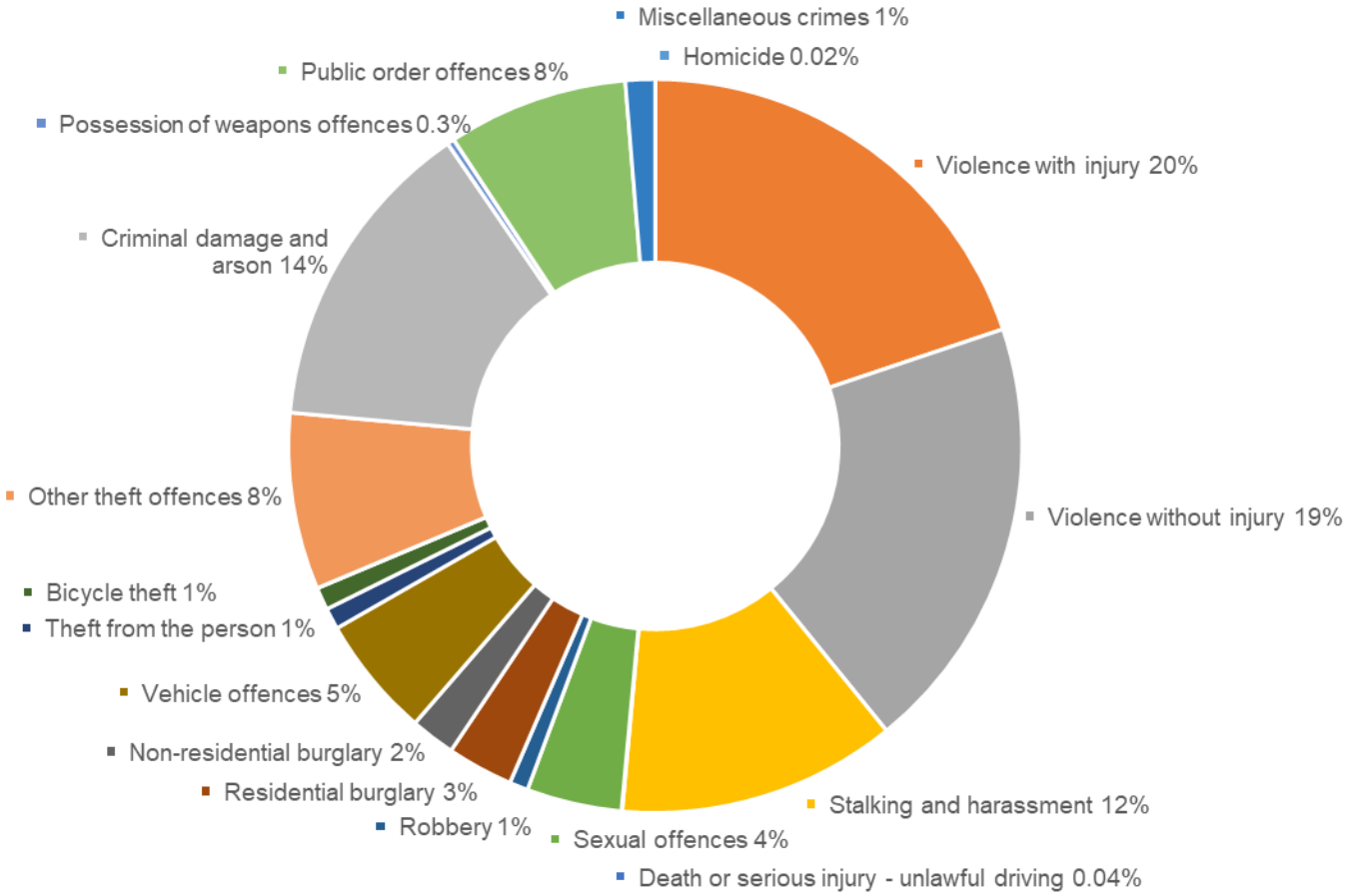
Appendix 9: Database Schema Diagram



Appendix 10: 2019/20 Recorded victim and witness reported (in-year) crime weighted by CHI, by sub-offence group



Appendix 11: 2019/20 Recorded victim and witness reported (in-year) crime (count), by sub-offence group



Appendix 12: 2019/20 - Police activity measure: Detection-rate (counts) compared to HDF by sub-offence group

	Detection Rate (% of reported crime count)	HDF (% of reported CHI)	Ratio (1 Detection Count: X CHI Score Detected) Unit: Percentage-point(s)
Violence against the person	11.0%	23.6%	2.2
Homicide	50.0%	53.7%	1.1
Violence with injury	14.1%	24.2%	1.7
Violence without injury	11.5%	9.1%	0.8
Stalking and harassment	4.8%	12.0%	2.5
Death or serious injury - unlawful driving	67.6%	71.9%	1.1
Sexual offences	8.2%	5.8%	0.7
Robbery	12.5%	12.5%	1.0
Theft offences	5.5%	9.1%	1.6
Residential burglary	10.9%	15.2%	1.4
Non-residential burglary	5.5%	5.5%	1.0
Vehicle offences	6.2%	8.7%	1.4
Theft from the person	4.1%	4.1%	1.0
Bicycle theft	3.1%	3.1%	1.0
Shoplifting	-	-	-
Other theft offences	3.6%	3.8%	1.1
Criminal damage and arson	9.0%	15.5%	1.7
Other crimes against society	13.6%	12.5%	0.9
Drug offences	-	-	-
Possession of weapons offences	16.4%	16.2%	1.0
Public order offences	13.7%	17.6%	1.3
Miscellaneous crimes	12.3%	11.5%	0.9