

Ethics Committee Briefing Note

Project Reference: DAL_2019_0004_Youth and MSV

Purpose of data analysis:

During the last 2 years or so there have been increasing instances of most serious violence (MSV), knife crime has been trending upwards since early 2015 and firearms offences have seen a slight trend upwards also since early 2015. MSV and knife crime in particular has seen rises in many parts of the country, particularly in the larger urban areas, leading to a countrywide concern with addressing this issue. In line with this, reducing serious violence affecting young people is a goal of WMP's Improvement Plan 2019-20 (which is to help WMP achieve the goals of its longer-term Ambition Plan), with a target of a 10% reduction in (non-DA) serious violence where either victim or offender are under 25 years old.

This project aims to understand the drivers behind young people committing MSV crime, including those involving knives and guns (for individuals aged 25 and under). This may point to potential policies and points of intervention in aggregate terms. The modelling will not identify individuals.

Source of analytical question / hypotheses to be examined:

The business question was posed by the FET.

Data to be used:

Level of analysis:

- Individual
 - Individuals aggregated?
 - Yes
 - No
- Specific Area:
 - Output Areas
 - Super Output Areas - Lower
 - Super Output Areas - Mid
 - Wards
 - Districts
- West Midlands
- Other

Reliability of data:

The data are sourced from WMP systems. A major element of this project will involve making an assessment of the quality of the data, the robustness of the various systems, etc. Any data quality issues will be noted and where applicable will be incorporated into the project (e.g. by excluding some data from a system if it is felt to be unreliable). These data, as part of the analytical project life cycle, will also be assessed for missing values, outliers and potential biases.

These systems are those currently used by WMP in their day-to-day business. Specifically in the case of intelligence data, these will be examined as to their veracity, source, etc. prior to inclusion (i.e.

only intelligence considered to be credible from credible sources will be used).

Sample or entirety:

Entirety.

If sample:

Not applicable.

Method of sampling:

Not applicable.

Method of choosing sample size:

Not applicable.

Sample size:

Not applicable.

Type of analysis:

- Exploratory
- Explanatory
- Predictive
- Optimisation

Proposed methodology:

It is envisaged that, following the EDA element of the project, potential features of interest will then feed into an explanatory model (likely a form of logistic regression) in order to ascertain the degree to which the various features, inter alia, increase or decrease the probability of committing MSV/knife/gun crime. A separate model will be built for each of these crime types.

Will the project eventually be automated:

- Yes
- No

Means of evaluation:

Not applicable.

ALGO-CARE considerations:

Advisory:

If applicable, are the outputs from the algorithm to be used in an advisory capacity?

It is envisioned that the outputs from the analyses will help identify touch points on young peoples' journey to committing these various crimes and, if some intervention were possible and effective, which of these points could provide the most effective return.

Does a human officer retain decision-making discretion?

Not applicable.

Lawful:

What is the policing purpose justifying the use of the algorithm (means and ends)?

The purpose is to identify those aspects that increase the likelihood of individuals committing these types of crimes which may point to the means by which these types of crime could potentially be reduced in the future.

Is the potential interference with the privacy of individuals necessary and proportionate for legitimate policing purposes?

Whilst data at the levels of individuals will be used as features included in the models, the nature of the analyses are such that findings will be applicable at the aggregate level.

In what way will the tool improve the current system and is this demonstrable?

There is no current system in place to undertake these types of analyses.

Are the data processed by the algorithm lawfully obtained, processed and retained, according to a genuine necessity with a rational connection to a policing aim?

The data are from WMP systems and collected to enable their normal day-to-day operations. This research question aims to aid with a policing aim in that the interests would be in forming policies and approaches that would help reduce crime in the future.

Is the operation of the tool compliant with national guidance?

The analyses proposed would accord with DCMS Data Ethics Framework 2018.

Granularity:

Does the algorithm make suggestions at a sufficient level of detail given it's purpose and the nature of the data processed?

The nature of the proposed methods is such that the findings are produced in aggregate which is the appropriate level given the research question.

Are data categorised to avoid broad-brush grouping and results and therefore issues of potential bias?

As the underlying data are at the level of individuals, there should be no categorisation.

Do the potential benefits outweigh any data quality uncertainties or gaps?

It is envisaged that the identification of touch points on the pathway to committing MSV will enable the development of approaches that may, over the longer term, help identify ways to reduce such crimes in the future.

Whilst examining data quality issues during the EDA stage of the project there will be extensive checking for apparent errors, missing values, compatibility across different underlying datasets, etc. Any identified issues will lead to discussions with SMEs and / or exclusion of potential features from the ABT.

Is the provenance and quality of the data sufficiently sound?

The data have been gathered during the day-to-day work of WMP and do enable analyses of the type envisioned for this project.

If applicable, how often are the data to be refreshed?

Not applicable.

If the tool takes a precautionary approach in setting trade-offs, what are the justifications for the approach taken?

Not applicable.

Ownership:

Who owns the algorithm and the data analysed?

WMP owns the model and the underlying data.

Does WMP need rights to access, use and amend the source code and data?

No.

Are there any contractual or other restrictions which might limit accountability or evaluation?

No.

How is the operation of the algorithm kept secure?

The data and the analyses are contained wholly within the EMP Hadoop system and the security measures employed therein. The type of analyses do not lend themselves to on-going operation (in an automated fashion).

Challenge:

What are the post-implementation oversight and audit mechanisms, e.g. to identify any bias?

Not applicable.

If the algorithm is to inform criminal justice disposals, how are individuals notified of its use?

Not applicable.

Accuracy:

Does the specification of the algorithm match the policing aim and decision policy?

The nature of the analyses chosen have been determined to be the best means of addressing the research question.

Can the accuracy of the algorithm be validated periodically?

Not applicable.

Can the percentage of false positives / negatives be justified?

Not applicable.

How was the method chosen as opposed to other available methods?

Due to the nature of the research question (explanation as opposed to prediction), the envisioned approach is appropriate.

What are the (potential) consequences of inaccurate forecasts?

Not applicable.

Does this represent an acceptable risk?

Not applicable.

How are the results checked for accuracy and how is historic accuracy fed back into the algorithm for the future?

Not applicable.

How would inaccurate or out-of-date data affect the result?

If data were to be wholly inaccurate then the analyses would essentially provide inapplicable findings. The Lab has sought to minimise this potential through a thorough analysis of the data in an extended EDA phase including their pitfalls, issues and overall nature. Discussions with SMEs should also highlight effects that may arise due to erroneous data.

Responsible:

Would the operation of the algorithm be considered fair?

The analyses will be fair in that each data point will be considered on its own merits.

Is the use of the algorithm transparent (taking account of the context of its use), accountable and placed under review?

The nature of the intended method(s) is such that the end-use is to provide information rather than predictions that feed into a process on an on-going basis.

Would it be considered to be used in the public interest and to be ethical?

In the face of increasing demand in this area it would be in the interest of WMP and society at large if the elements that lead to (or detract from) how likely it is that an individual will commit MSV/knife/gun crime.

Explainable:

Is information available about the algorithm / decision-making rules and the impact of each feature?

The nature of the envisioned methods is such that information regarding the features and how they relate to each other is capable of explanation.