Ethics Committee Briefing Note

Project Reference: DAL_2019_0011_DA
Purpose of data analysis: There are 3 distinct but interlinked elements to this project: 1. Produce a process chain for domestic abuse (DA) offences that will be suitable for inclusion in a Qlik dashboard 2. Undertake an examination of outstanding offenders in DA 3. Subsume both of the above into an analysis that examines the factors that contribute to or detract from the probability of making a charge in DA cases. The first element is to identify the process chain that flows from an incoming DA crime. Along the points in this chain, counts and proportions are to be identified which allows for the degree of attrition, etc. to be identified. This is merely a means to present information only. The second element is to be an examination of the 'outstanding offenders' in the DA portfolio to explain their impact on performance- in terms of repeat offender and likelihood of a positive outcome. The third element subsumes the above two and is to identify those elements that contribute to and detract from the likelihood of making a charge in DA offences. This include resource use, etc.
Source of analytical question / hypotheses to be examined: The business question was posed by PPU and 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 The unit of analysis will be crimes.

Reliability of data:

An extensive exploratory data analysis (EDA) phase will be undertaken to examine the extent of any data quality issues. Based on work conducted for DAL_2019_0001_RASSO_investigation_analysis, the general issues re: data quality revolve around changes in definitions / policies in terms of the treatment of crimes (e.g. single v. multiple crimes). Initial phases of the project will revolve around discussion with SMEs to try and identify any such issues.

Sample or 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:

The first question will necessitate identification of the various pathways through which a DA crime can go. This will be undertaken via database querying and cross-tabulation to produce tables.

The second question is likely to be answered via a mixture of database querying and an explanatory statistical model in order to identify the degree to which outstanding DA offenders impact on outcomes, lead to further offences, etc.

The third question will likely be answered via a separate (but related) explanatory statistical model that would (probably) examine a wider range of features than the previous model. This will examine a wider range of crimes.

Will the project eventually be automated:

☐ Yes
☑ No

Means of evaluation:

Not applicable (other than during the explanatory model build process).

ALGO-CARE considerations:

Advisory:

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

The findings from the analyses may help identify the means by which DA investigations could be strengthened and as such may be used for future policy creation. It is not intended that this becomes a means by which investigations are determined to proceed or not (or other forms of prioritisation).

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)?

These types of investigations are, due to their nature, complex and potentially resource intensive. Understanding the chain of events in DA investigations will help identify points in the process could be subject to further examination to improve their robustness.

The project would also allow for the impact of outstanding offenders to ascertained which would also enable policy creation around how outstanding should be tackled.

An ability to identify what leads to a 'successful' conclusion of a case and what detracts from success will also be of benefit to WMP in gaining an understanding as to what could be improved or mitigated in undertaking wider DA investigations.

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

The analyses will involve data regarding DA crimes, investigations and outcomes and therefore details personal to victims. However this needs to be balanced against the ability to potentially improve DA investigations which would be in line with the legitimate aims of WMP and which could aid help victims of such crimes in the future.

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

By providing an understanding of the factors that contribute to 'success', it is hoped that WMP could undertake DA investigations as effectively as is possible.

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 to be analysed were collected as part of WMP's duty to investigate crimes and as such have been collected in the appropriate manner for the appropriate purposes.

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 resulting analyses will provide information as to the effect 'on average' on the success or otherwise of DA investigations. This is the appropriate level of detail to enable the identification of success factors in investigating these types of crimes.

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

Some categorisation may take place in forming the features of the explanatory modelling (e.g. broad age groups); however the details will become apparent during the analyses. Whilst the analyses will be on guard against the potential for paradoxical results that may arise from categorisation these are unlikely to be seen.

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

The project will include an extensive EDA element and this should highlight areas of heightened uncertainty in the data or where particular gaps exist. The benefits of these analyses, should they highlight areas within the control of WMP that could be acted upon, would be of benefit to victims of DA offences and of course any resulting policy changes could be further examined.

Is the provenance and quality of the data sufficiently sound?

The data have been gathered during the day-to-day investigative 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 underlying data and any models resulting from the analyses.

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 WMP Hadoop system and the security measures employed therein. The type of analyses envisaged 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 used will be 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). As with previous RASSO investigations project, it is likely that a number of methods will be employed in order to assess the robustness of the statistical models (i.e. assess feature importance, etc.).

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 will seek 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 victims if those elements that could improve the efficacy of investigations could be identified.

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.