The value of hypothesis testing in analysing organised crime

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Foreign criminal syndicates 'behind metal thefts in Britain'

Gangs in China and Africa are orchestrating metal thefts in Britain, police believe, in a new development in the crime epidemic sweeping the country.
Table S.1 Summary of estimates of the scale and the social and economic costs

<table>
<thead>
<tr>
<th>Sector</th>
<th>Proportion of total crime type that is organised</th>
<th>Estimated scale</th>
<th>Completeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organised acquisitive Crime</td>
<td>Various</td>
<td>£550m</td>
<td>See below</td>
</tr>
<tr>
<td>Cash and valuables in transit</td>
<td>100%</td>
<td>£12m</td>
<td>Only includes rec to underestimate scale</td>
</tr>
<tr>
<td>Distraction burglary</td>
<td>100%</td>
<td>£35m</td>
<td>Adjusted for under offences. Could over</td>
</tr>
<tr>
<td>Organised metal theft</td>
<td>20%</td>
<td>£24m</td>
<td>Only includes scale on companies and include underestimate scale</td>
</tr>
<tr>
<td>Plant theft</td>
<td>100%</td>
<td>£100m</td>
<td>Only includes report thefts are likely to b</td>
</tr>
</tbody>
</table>

15. Perpetrators can be broadly split into two groups; small-scale, local offenders and organised crime groups. We heard from the BTP that local criminals were responsible for the majority of thefts from the railway, these being “opportunist but nonetheless professional criminals” and that up to 80% of those arrested for metal theft have previous convictions for similar crimes. Metal theft has recently been included in the serious organised crime strategy, and the BTP welcomed this, but noted that at a maximum only 30% of cable thefts involved organised criminal gangs.
To what extent are organised crime groups involved in metal theft in England and Wales?
Why did we use hypothesis testing?

- Gathering information on OCGs is difficult
- There is no OCG marker on most systems
- Police know less about OCGs in new crime problems
Hypothesis testing in crime analysis

Summarise the problem

Choose 3–5 hypotheses to test

Analyse those hypotheses

Draw conclusions

Generating hypotheses

Existing evidence

+ 

Discussions with police

Potential hypotheses
If OCGs are involved in metal theft ...

- Some metal thieves would have previously been involved in offences associated with OCGs.
- Police intelligence would suggest some metal thieves are involved in OCGs.
- Some metal thieves would use sophisticated methods to steal metal.
$n = 839$ offenders

every person charged/cautioned for metal theft by British Transport Police, 2007–13
Metal thieves       All offenders

Most common offences

<table>
<thead>
<tr>
<th>Theft</th>
<th>Non-theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shoplifting</td>
<td>1. No insurance</td>
</tr>
<tr>
<td>2. Taking motor vehicle</td>
<td>2. Drug possession</td>
</tr>
<tr>
<td>3. Burglary (OTD)</td>
<td>3. Failing to appear</td>
</tr>
<tr>
<td>4. Burglary (dwelling)</td>
<td>4. Disqualified driving</td>
</tr>
<tr>
<td>5. Theft from vehicle</td>
<td>5. Criminal damage</td>
</tr>
</tbody>
</table>
Hypothesis 1

If OCGs are involved in metal theft … some metal thieves would have previously been involved in offences associated with OCGs
four offenders had previous convictions for offences that the Home Office believe might be ‘indicative’ of involvement in an OCG
Hypothesis 2

If OCGs are involved in metal theft … police intelligence would suggest some metal thieves are involved in OCGs
eleven offenders linked to OCGs

on police intelligence databases
400 metal thefts chosen at random

25% of known metal thefts by sample offenders
“Suspect and younger friend ... walked past a quantity of lead in an alleyway, returned home to pick up a bag then returned and placed [the metal] in a holdall to sell it at a local scrap merchant.”
Hypothesis 3

If OCGs are involved in metal theft … some metal thieves would use sophisticated methods to steal metal
nine thefts involved sophisticated methods

e.g. large groups of offenders, use of fake documents or specialist equipment
Overall

- 0.5% of metal thieves have an organised-crime conviction
- 1.3% of metal thieves were linked to OCGs by intelligence information
- 4.5% of metal thefts involved sophisticated methods
Testing the hypotheses showed that the involvement of OCGs in metal theft in England and Wales is substantially less than previously thought.
Thanks
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Credits
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Journal article: lesscrime.info/g/3