



JDiBrief - Analysis

Interstitial crime analysis: SUMMARY (1 of 5)

Authors: Andy Gill and Henry Partridge, Transport for London,
and Andrew Newton, University of Huddersfield

Crime on public transport can be very difficult to analyse. 'Stealth crimes' like pick-pocketing present a particular challenge because victims often have an imprecise knowledge of the location and time of the offence. In this scenario crime has typically been recorded as happening at the reporting station (often at the 'end of line') which skews any analysis of the collective crime locations.

Interstitial crime analysis (ICA) is a technique which overcomes this problem and improves the estimation of the spatial distribution of crime on networks when the exact location of offences is unknown. Based on the aoristic analysis technique (devised to estimate the temporal distribution of crime when only a time period is known), ICA is used to estimate the location of crimes in the interstices – the intervening spaces - of a network when the location is unknown.

ICA is situated within a family of analytical techniques which can be applied to understand crime patterns in a public transport environment. Figure 1 presents different crime scenarios alongside the most appropriate spatial-temporal technique for that situation.

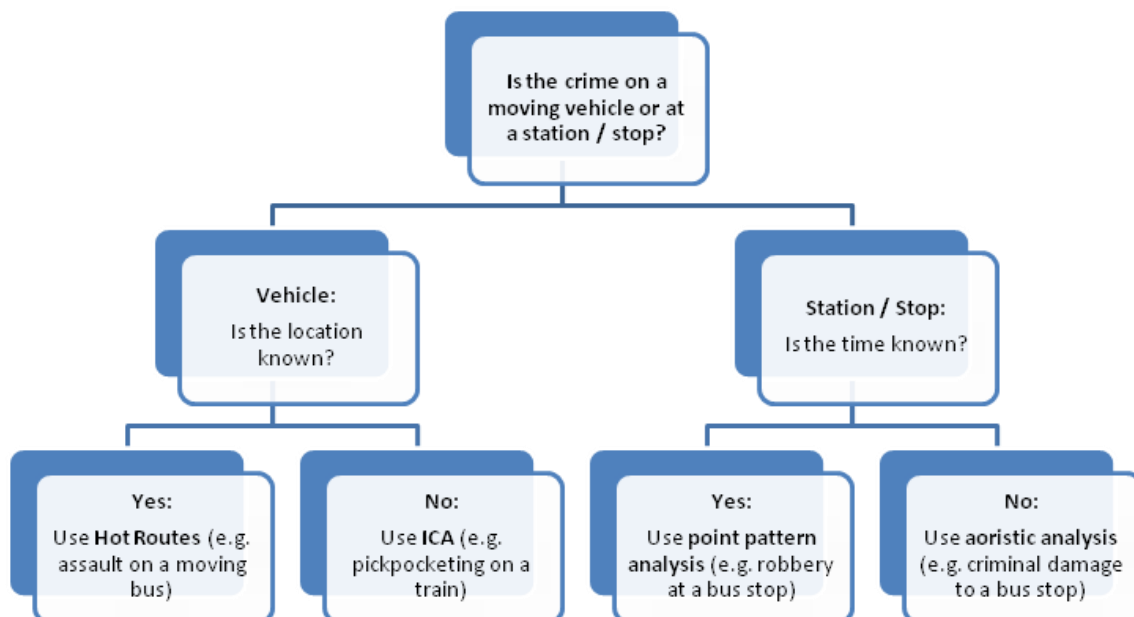


Figure 1 - Public transport spatio-temporal crime analysis flowchart

Interstitial crime analysis (ICA) allows an analyst to identify and map crime concentrations along paths (e.g. sections of a transport network) and connected nodes (e.g. stations and interchanges). Colour and line-width can be used to visualise the results - known as thematic mapping. Identifying concentrations of crime facilitates a more informed understanding of where to deploy (often policing) resources and target crime prevention efforts.