JDiBrief - Analysis

Hot Routes: CASE STUDY (4 of 5)

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APPLICATION: To date, the Hot Routes method has been applied to study crimes and incidents on the transport network in London, to examine road traffic collisions involving cyclists, and in analysis on theft from motor vehicle offences. Here we illustrate the technique using two examples.

STREET CRIME: Figure 1 shows the distribution of street crime in an urban area using simulated crime data. The street segments are of varying length so an intensity measure has been used which divides the count of crime on each street segment by its length (metres).

It is clear from this map that crime concentrates along certain street segments which tend to cluster in the south western corner of the study area. The ability to identify such concentrations of crime allows limited police resources to be efficiently targeted in areas that need it most.

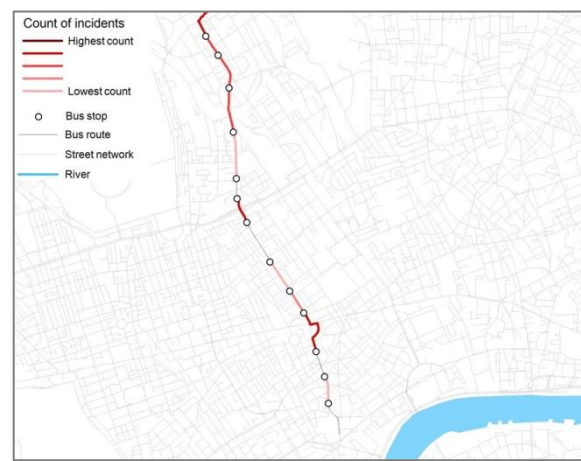**Figure 1: The distribution of street crime in an urban area**

Figure 2: The distribution of driver reports of disturbance along a section of bus route

ANTI-SOCIAL BEHAVIOUR ON A BUS: Figure 2 shows the distribution of driver reports of disturbance along a section of bus route. The bus route has been divided into segments that correspond to the spacing between bus stops but it could be split by administrative boundaries, like census output areas or administrative geography, to facilitate comparison with surrounding crime levels or socio-demographic characteristics. This map shows particular sections of the route at greater risk of disturbances, allowing transport police to target their activities to these precise segments of the bus route.

DEVELOPMENTS: Accounting for the population at risk allows the risk of victimisation to be assessed more precisely. For this reason, the original Hot Routes method has been developed to use an alternative denominator to control for passenger numbers. Other denominators (for example the frequency of buses) can also be used *in addition of* the length of the network segment to estimate the risk more precisely.

It is anticipated that Hot Routes will be integrated with other network-related spatial analysis techniques in the future. In the meantime, complementary analysis is often done alongside Hot Routes. Investigating changes by time of day and day of week on the routes in question are very important before police resources can be directed to the right times and places.

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