Preliminary Results

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Covariates of Gun Crime

Variable	**Description**
Crowding	Percent of occupied housing units with more than one person per room
Poverty	Percent of households living below the federal poverty level
Unemployment	Percent of persons aged 16 years or older in the labor force that are unemployed
Education	Percent of persons aged 25 years or older without a high school diploma
Dependents	Percent of the population under 18 or over 64 years of age
PCI	Per Capita Income
Hardship	A score that incorporates each of the selected socioeconomic indicators

Table 1: Descriptions of the variables from the selected socioeconomic indicators in Chicago, 2008-2012 data set.

Subset	**AIC Value**
0 2 3 5	862.73
0 1 3 5	863.68
0 2 3 5 6	863.69
0 1 2 3 5	863.77
0 2 3 4 5	864.42

Table 2: The results of a subset selection procedure with a negative binomial regression and AIC as the diagnostic criteria.

Parameter	**Description**	**Value**
α	Dispersion	0.7095
β	Regression Coefficients	$[4.1258, 0.0338, 0.1064, -0.0537]$
$LogL$	Log Likelihood	-427.3667
δ	Objective change at convergence	$4.9554x10^{-7}$

Table 3: Diagnostics from the Bayesian subset selection algorithm.

The covariance matrix of β is:

$$CovB = \begin{bmatrix} 106.3414 & 2330.1 & 1643.9 & 3802.9 \\ 2330.1 & 65035 & 43346 & 87248 \\ 1643.9 & 43346 & 31416 & 62748 \\ 3802.9 & 87248 & 62748 & 141640 \end{bmatrix}$$

Number of Disease States

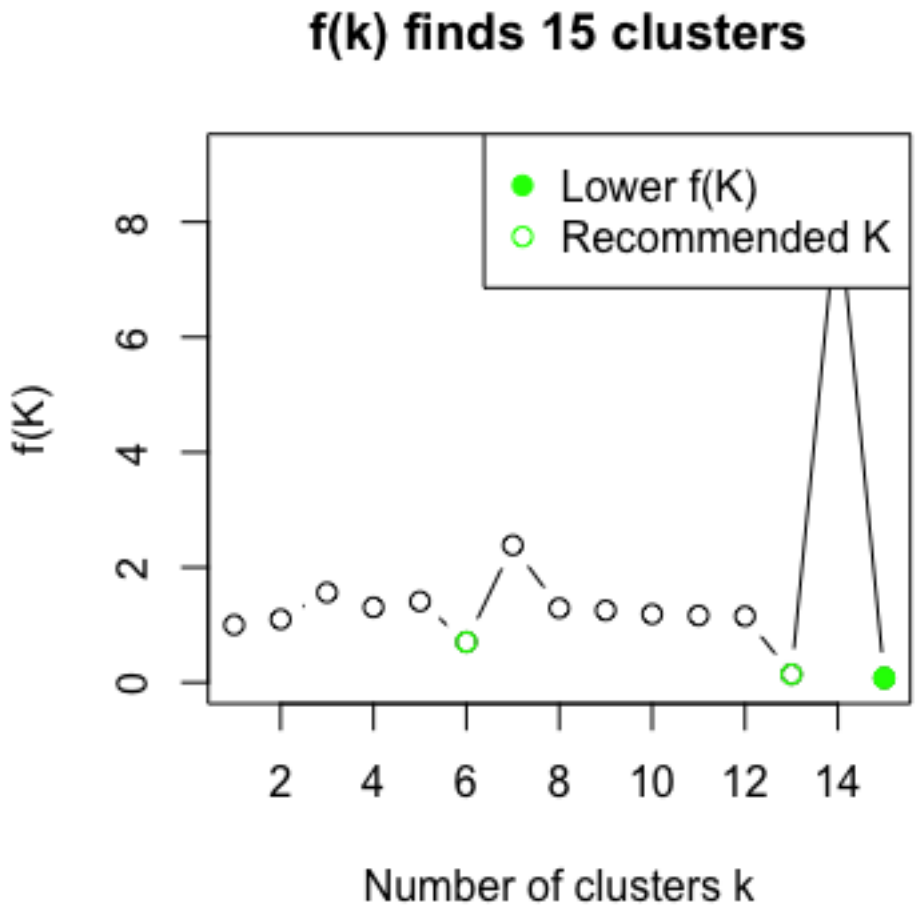

Figure 1: The resulting $f(K)$ values for one iteration of the K-selection algorithm.

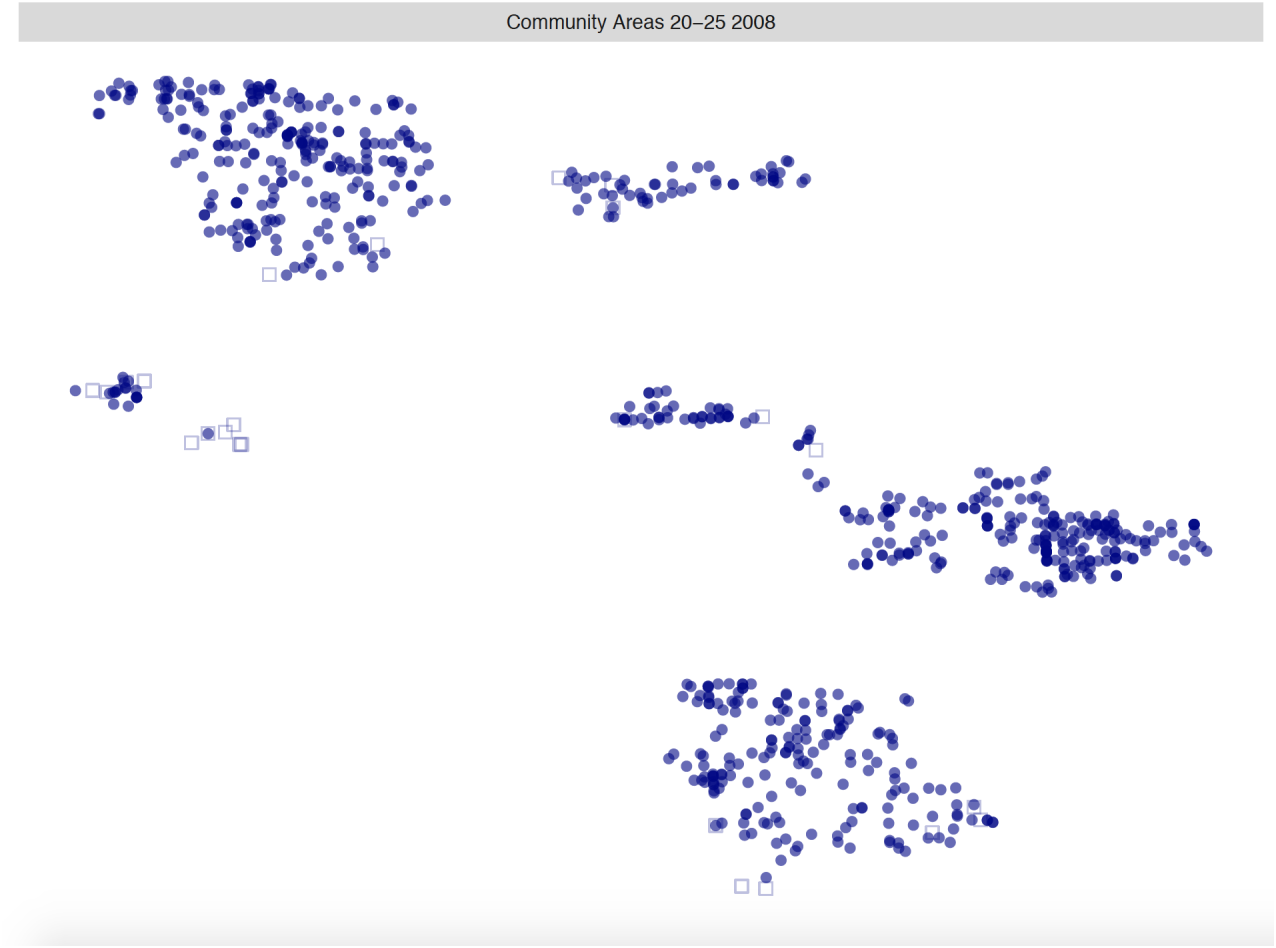

Figure 2: Map of gun crimes occurring in Chicago community areas 20-25. Open squares are crimes that have not been triggered by past crimes, while filled circles are those which have been triggered.