

Fast reaction police units in Medellín: A budget-constrained maximal homicide covering location approach

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Inglés: We propose a maximal covering location problem with a budget constraint to determine the optimal location of facilities that provide fast police assistance to homicide hot spots, to mitigate criminal activity in Medellín (Colombia). We use the Google Maps Application Programming Interface (API) to estimate the average traveling times between police units and criminal spots, and impose a budget constraint taking into account the project's costs. Our procedure identifies how the optimal locations for fast reaction police units have a diminishing marginal coverage pattern when subject to loosened budget constraints.

Español: Este documento considera un problema de localización de cobertura máxima con restricciones de presupuesto para determinar la ubicación óptima de instalaciones policiales que brinden atención rápida a potenciales puntos criminales, para así mitigar la actividad delictiva en Medellín (Colombia). Se utiliza la Interfaz de programación de Google Maps (API) para estimar los tiempos promedio de viaje entre las unidades policiales y los puntos criminales, y se imponen restricciones presupuestarias teniendo en cuenta los costos del proyecto. El procedimiento identifica cómo la cobertura asociada a las ubicaciones óptimas de los comandos de policía de atención inmediata tiene un aumento marginalmente decreciente en la medida que se reducen las limitaciones presupuestarias.

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