Project „SKALA“

Predictive Policing in North Rhine-Westfalia
SKALA – Project Aim

The aim of the project is to examine the possibilities and limitations of the prediction of crime and to survey the efficiency and effectiveness of the corresponding police interventions.
SKALA – Claims and Philosophy

Independent, open System

Theory led scientific Approach

Usability by Police

Transparent Methods

No „Black-Box“

Objective Evaluation

Data Sovereignty
SKALA – Methodology

Theory led scientific approach
SKALA – Methodology

Theory led scientific approach – example:

Rational-choice theories are based on the assumption that a perpetrator carries out a cost-benefit assessment before committing a burglary, for example.

- **Hypothesis**: The higher the value of the expected goods in an object, the higher the probability of a burglary.

- **Indicators for measurement**: purchasing power, rent index, exclusiveness of the house, ...
SKALA – Data

- Crime data
- Residential structure
- Building structure
- Traffic connections
- Purchasing power
- Mobility
SKALA – Data-Mining-Model: input
SKALA – Data-Mining-Model: geo-processing
SKALA – Data-Mining-Model: prediction
SKALA – Practical Implementation

• Weekly predictions using complex statistical methods
• Prediction of domestic burglary, commercial burglary and car theft
• Pilot authorities (cities) are Bonn, Cologne, Duesseldorf, Duisburg, Essen and Gelsenkirchen
• Adaption to local conditions (police experience remains central)
SKALA – Visualization of prediction areas
SKALA – Visualization of prediction areas with heatmaps
SKALA – Limitations

• Poor predictions and good police actions achieve the same result ("no crime/no burglary")

• Evaluation is difficult, because it’s hard to measure something that police tries to prevent
SKALA – Possibilities

• Predictive Policing is possible

• Burglary probabilities used to be up to four times higher in predicted specific residential quarters

• The prediction accuracy is linked with data quality and temporal availability

• SKALA supports local operation planning
SKALA – Timetable & Outlook

Domestic Burglary

Car Theft

Smartphone-App Predictions for the public

Inclusion of more cities

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Thank you for your attention.

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