BigO: big data against childhood obesity

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BigO will collect and analyze big data on children’s behaviour and their environment to enable public health authorities to plan and execute effective programs against childhood obesity

Motivation: Despite ongoing efforts, ~ 2.8 million deaths per year in the EU result from causes associated with overweight and obesity

Policy advisor (aetiology):

What makes the population of a specific neighborhood of Athens scarcely use public means of transportation?

(easy)

What makes the population of a specific neighborhood of Dublin exercise less than average?

(more interesting)

Why do students at IEGS eat their lunch too fast?

Policy planner (prediction):

What will be the effect of adding a bus line to the use of public means of transportation of the population of a specific neighborhood in Athens?

Approach:

• Big data
• Citizen science

Aetiology

Why bad habits are being adopted

Not in general! Here, at a local level

Prediction

What is the effect of an adopted policy

Estimate it before it is adopted

Quantitatively

Challenges

Engagement
Privacy
Scalability
Accuracy
Validity

BigO evidence

Aetiology

Why bad habits are being adopted

Not in general! Here, at a local level

Prediction

What is the effect of an adopted policy

Estimate it before it is adopted

Quantitatively

Measurements: Devices + Apps

Indicators of behavior:

Physical activity, eating, transportation, sleep

Environment measurements:

Maps
Statistical Authorities
Images
• Machine Learning
• Information Retrieval
• Computer vision

Example: Estimate local employment rate