

Utility Program Response Modeling

A Three Stage Approach

Siddharth Patel, Ram Rajagopal, Sam Borgeson, C. Anna Spurlock, Annika Todd



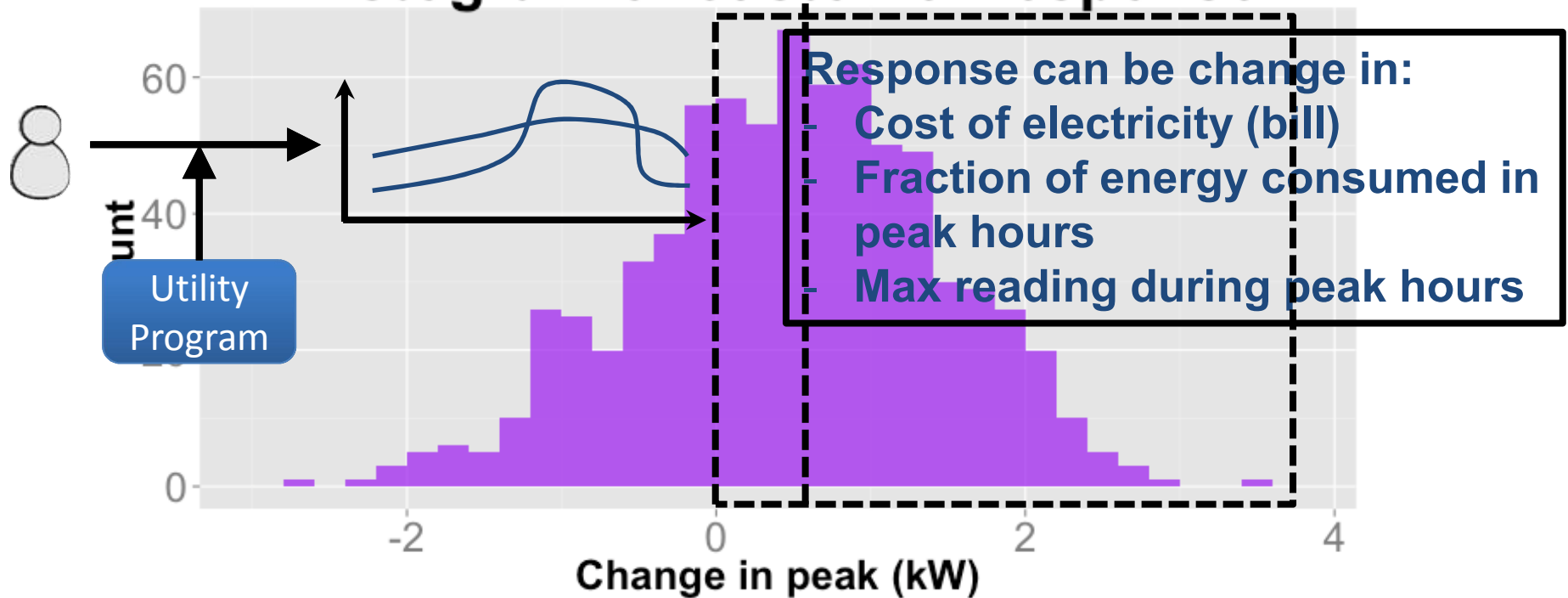
Stanford

Behavior Analytics, LBNL

Introduction

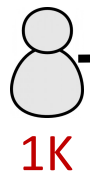
- Role of consumers in the smart grid

Histogram of customer response



Consumer characteristics

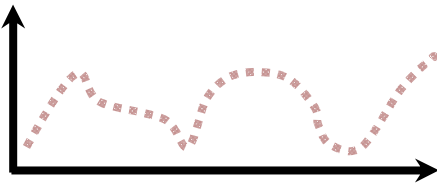
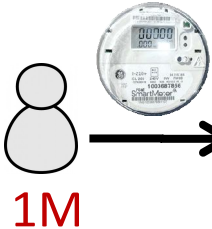
Traditionally



Questionnaire

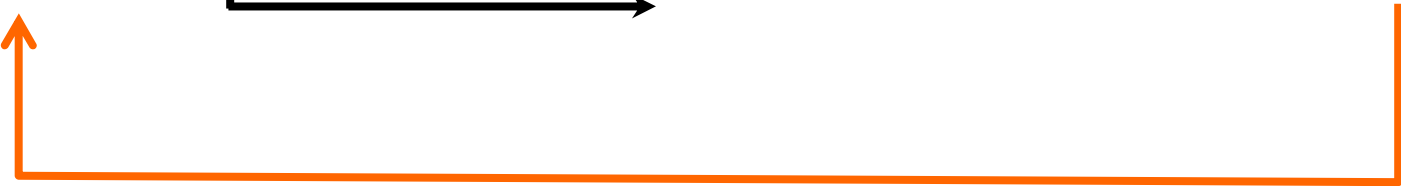
Before
After

Smart meter



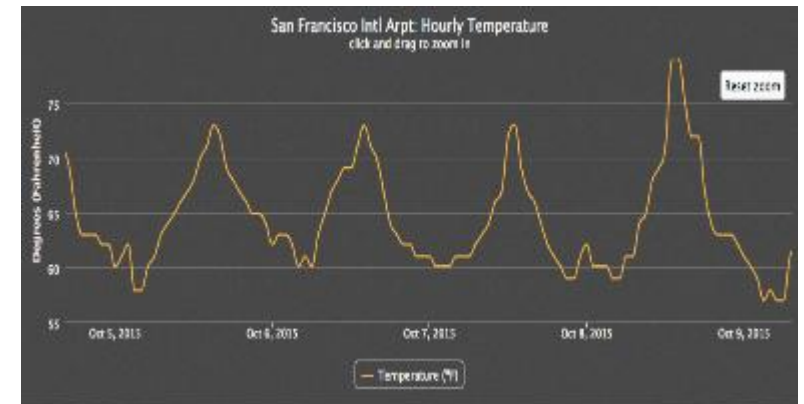
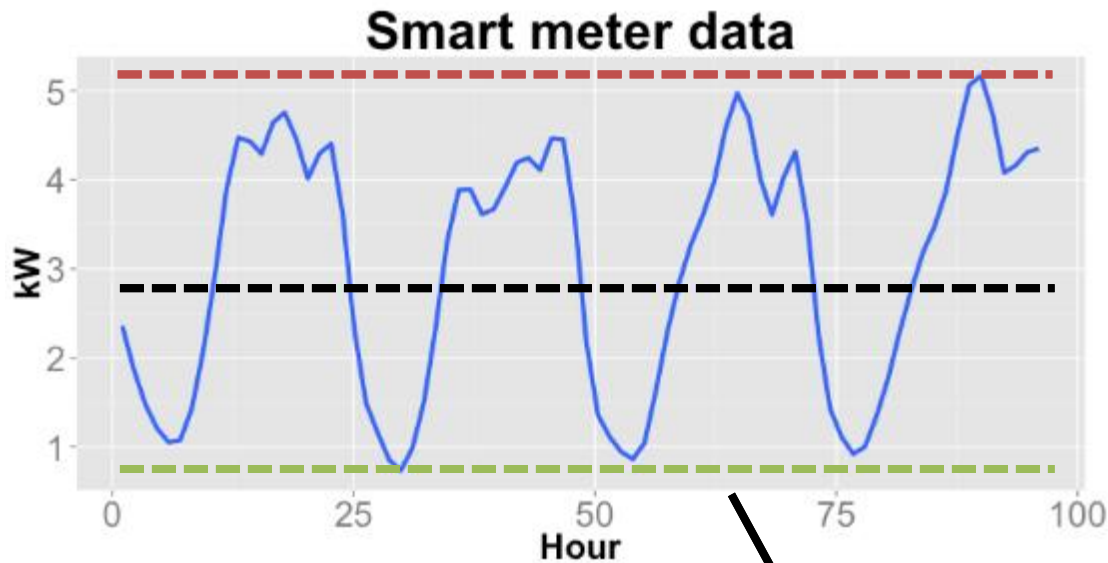
Extract
Features

Demand
Analytics &
Optimization



Consumer features

- Our method – let the data speak

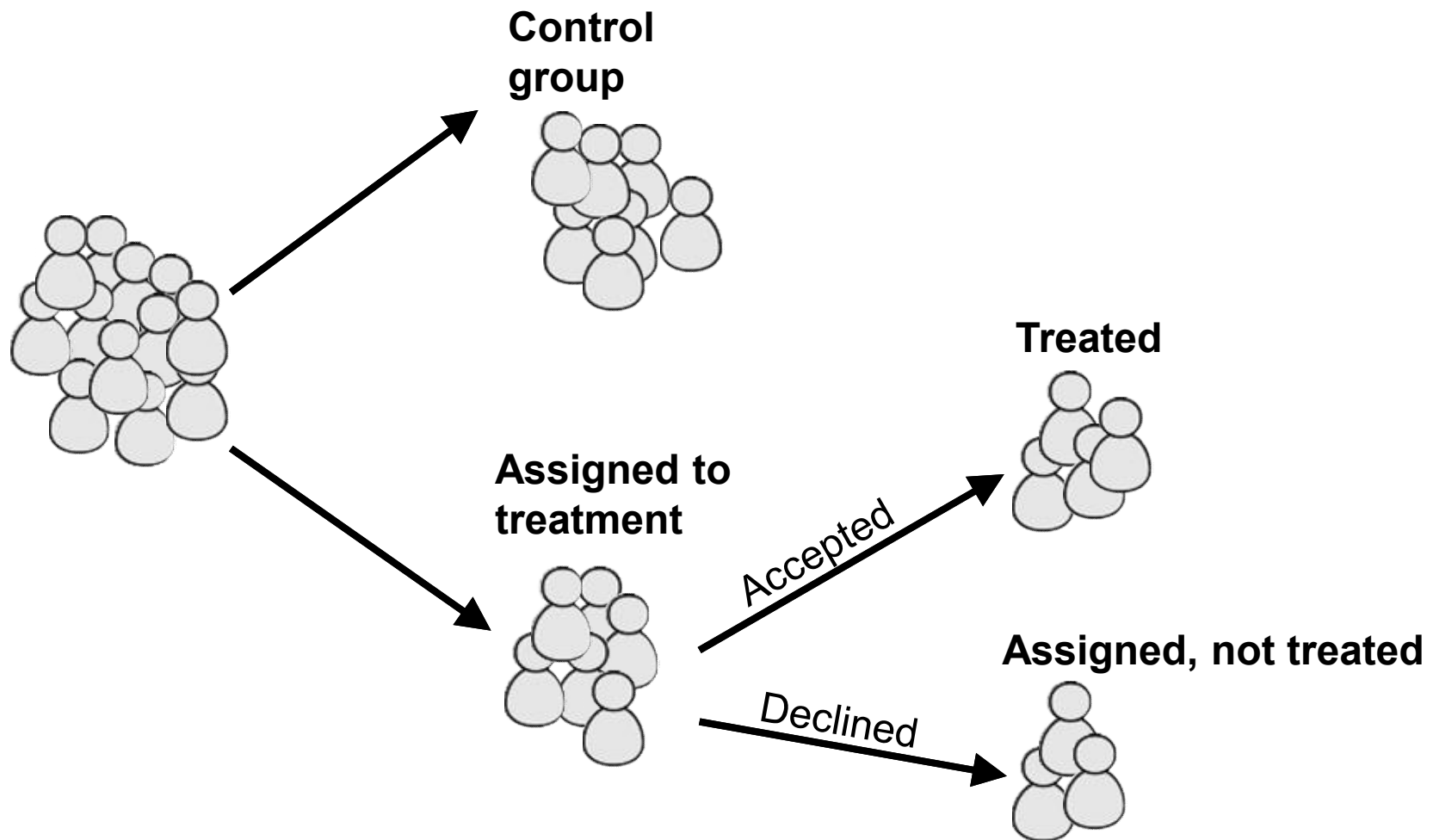


Algorithm

temperature sensitivity

Programs

- Randomized controlled trials w/ encouragement



Results and Conclusions

- Yes – features can help explain heterogeneity!
 - Even across groups with different rate plans