The Power of Data

Julia Friedman
Oracle Energy & Water

November 15, 2022
Ground-truth
Not directly observable

Third-party data
Easy to obtain, moderately accurate, misses many customers

Ask customers
Collect directly, very accurate, misses many customers

Census-tract data
Total coverage, but averages obscure many eligible customers

Machine learning
Goal: total coverage with better accuracy than census-tract averages
Affordability metrics make deep learning actionable, enhancing a utility’s ability to identify and serve limited income customers

1. **Household-level energy burden** – What proportion of a household’s annual income goes towards energy costs?

2. **Census tract Ability to Pay Index** – What is the average household’s available budget after housing costs?

3. **Census tract poverty ratio** – what proportion of households are living at or below the poverty level

4. **Energy vulnerability score** - weighted, composite score between 1 and 100 for every customer
Data, analytics, a flexible and comprehensive customer and administrator engagement platform, and a strong user experience are all necessary to drive affordability outcomes.

Rich datasets for segmentation and targeting
Surface personalized data-driven insights within communications
Behavioral science and user-experience innovation
Behavioral science describes patterns of behavior that may not always seem rational but are still universal and predictable.
Data science, powerful and accessible customer and administrator engagement platforms, and a strong user experience are all necessary to drive affordability outcomes.

2.9X higher rate of home weatherization
Northeast IOU #1

22% reduction in high bill calls + 27% increase in program awareness
Northeast IOU #2

13% increase in discount rate adoption
West Coast IOU
Data science will play a pivotal role in achieving equitable decarbonization outcomes

**Energy efficiency**
- Adoption of whole home retrofit programs
- Targeted EE savings recommendations
- Inclusive program offerings

**Electrification**
- Identification of Electrification customers
- Adoption of Electrification appliance
- Ongoing electrification engagement

**Demand flexibility**
- Proven load shifting
- Adoption of DLC devices
- Adoption of TOU rates
- Ongoing demand engagement

**Clean power adoption**
- Identification of solar / storage customers
- Adoption of Solar / storage
- Ongoing customer engagement
Ask not what you can do for data, but what data can do for you.

- Me (and probably other people)