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The Advantages & Limitations of Using Data to Identify Hard-to-Reach Markets

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Overview

- Can be defined using data
- Can be identified using data
- Can be understood better using data

However, data alone won't improve our ability to break into HTR segments….

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Today's topics

1. What is the HTR market, according to available data?

2. Why are they hard-to-reach?

3. What should we do to leverage data to improve program participation?

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Types of data needed for current HTR analysis

| Program participation	Building stock	Population studies	Energy usage data
• Address • Trade area • Sales data	• Commercial Building Stock Analysis (CBSA) • Residential Building Stock Analysis (RBSA) • Real property information (Core Logic)	• Census • Demographic (Experian) • 'Firmographic' (Dunn & Bradstreet) • Psychographic (Experian)	• Annual energy use • Bill payment program participation

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Types of tools needed for this analysis

- Data blending (Alteryx and R)
- Geospatial plotting (Alteryx and ESRI)
- Data visualization & exploration (Tableau)
- Curious minds
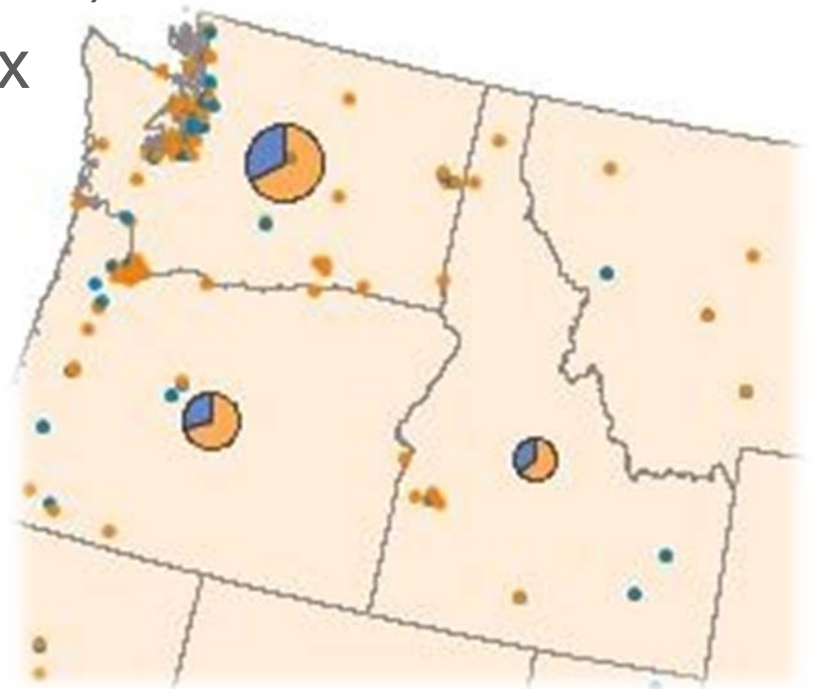
Defining HTR with data
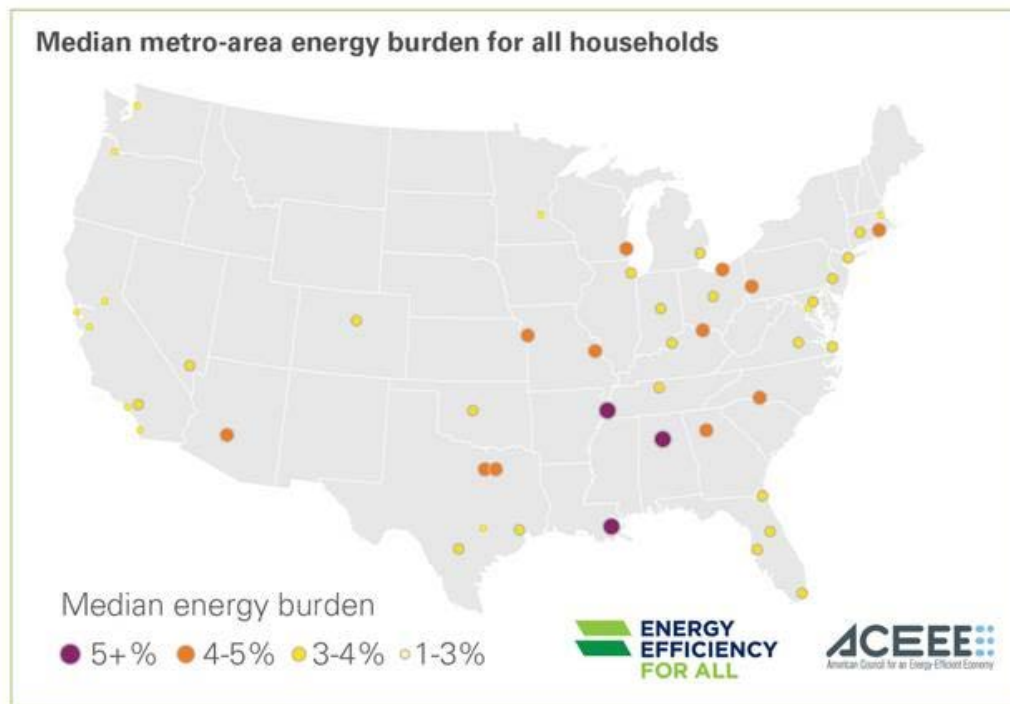
We can build a composite picture of the HTR with:

1. Program participation analysis
2. Identifying billing:income ratios
3. Geolocation of intended program participants
4. Other indicators that flag a lack of participation

1. Program participation

- With our current data sources & tools, we just need one piece of program data to gain some analytical insight
  - Address, geolocation, building type, or demographic info for residential HTR
  - NAICS code, building stock type, address, or geolocation for commercial/industrial HTR
- Compare participants to the rest of population to identify unaddressed groups

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2. Energy cost-to-income analysis

By establishing a median energy bill amount and analyzing it relative to household income, a defacto identification of individual HTR homes can be identified.


Median metro-area energy burden for all households

Median energy burden
● 5+ % ● 4-5% ● 3-4% ○ 1-3%

ENERGY EFFICIENCY FOR ALL

ACEEE
American Council for an Energy-Efficient Economy

ACEEE April 2016 study: *'Lifting the High Energy Burdens in America's Largest Cities'*

- Many low income households spend 2-3x more income on utility bills

- Older housing with poor ventilation and aging, inefficient appliances and heating systems are a major factor

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3. Geolocation

If program participation is dependent on retail or trade ally availability, identify HTR through geoanalysis
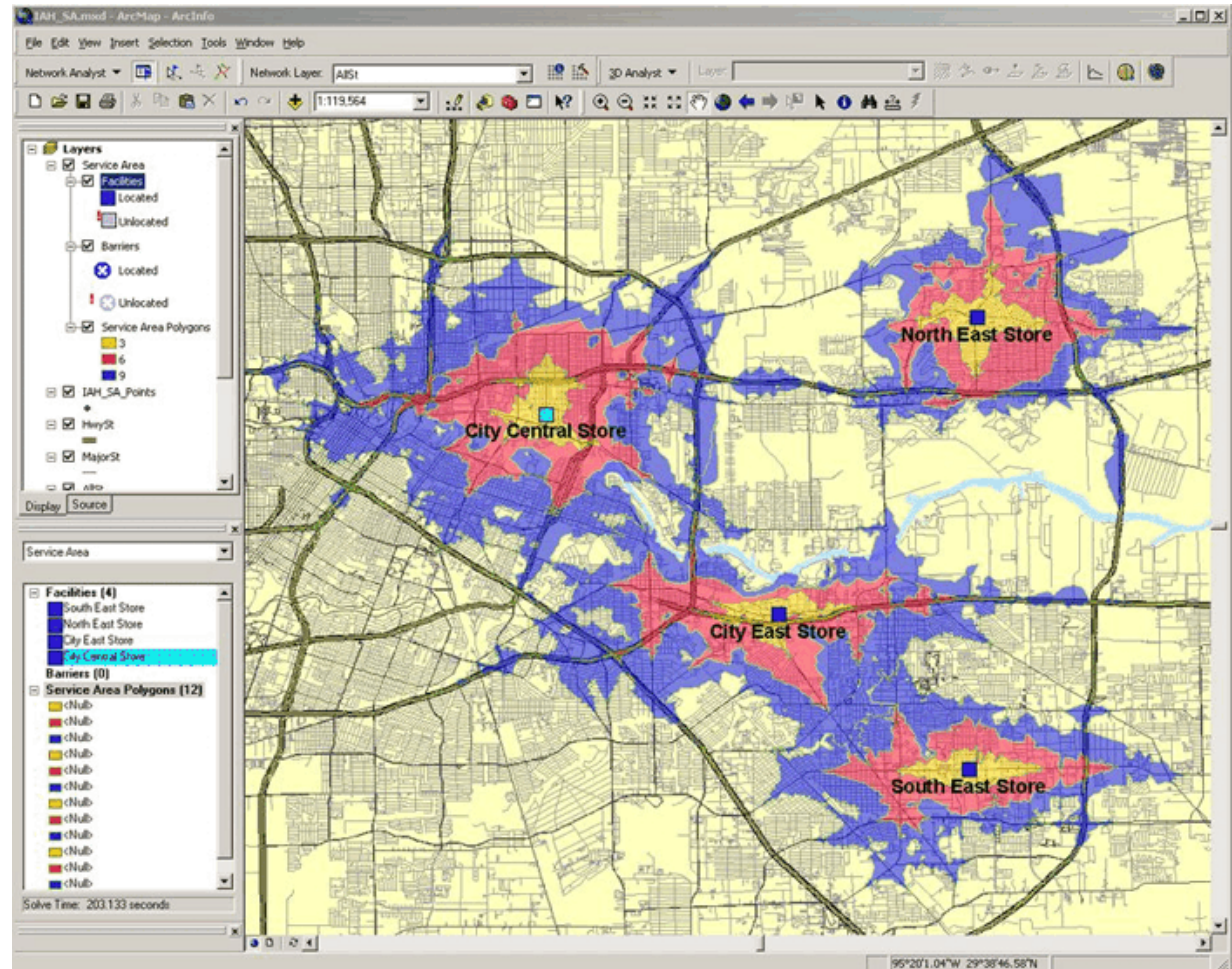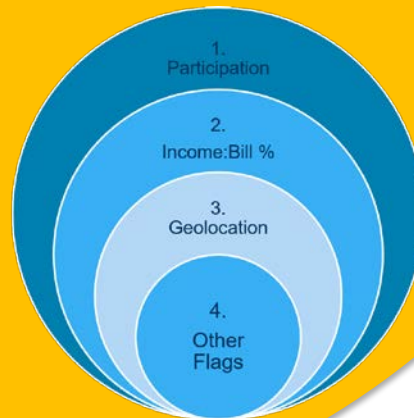
4. Program non-participation flags

Indicators of a lack of program involvement may include:

- Late bill payment
- Low income assistance with bills
- Reports from social services that identify health issues known to be related to poorly heated or cooled homes (asthma, respiratory problems, heart disease, arthritis, rheumatism)

These four data-enabled approaches build a composite picture of HTR…

1. Participation

2. Income:Bill %

3. Geolocation

4. Other Flags

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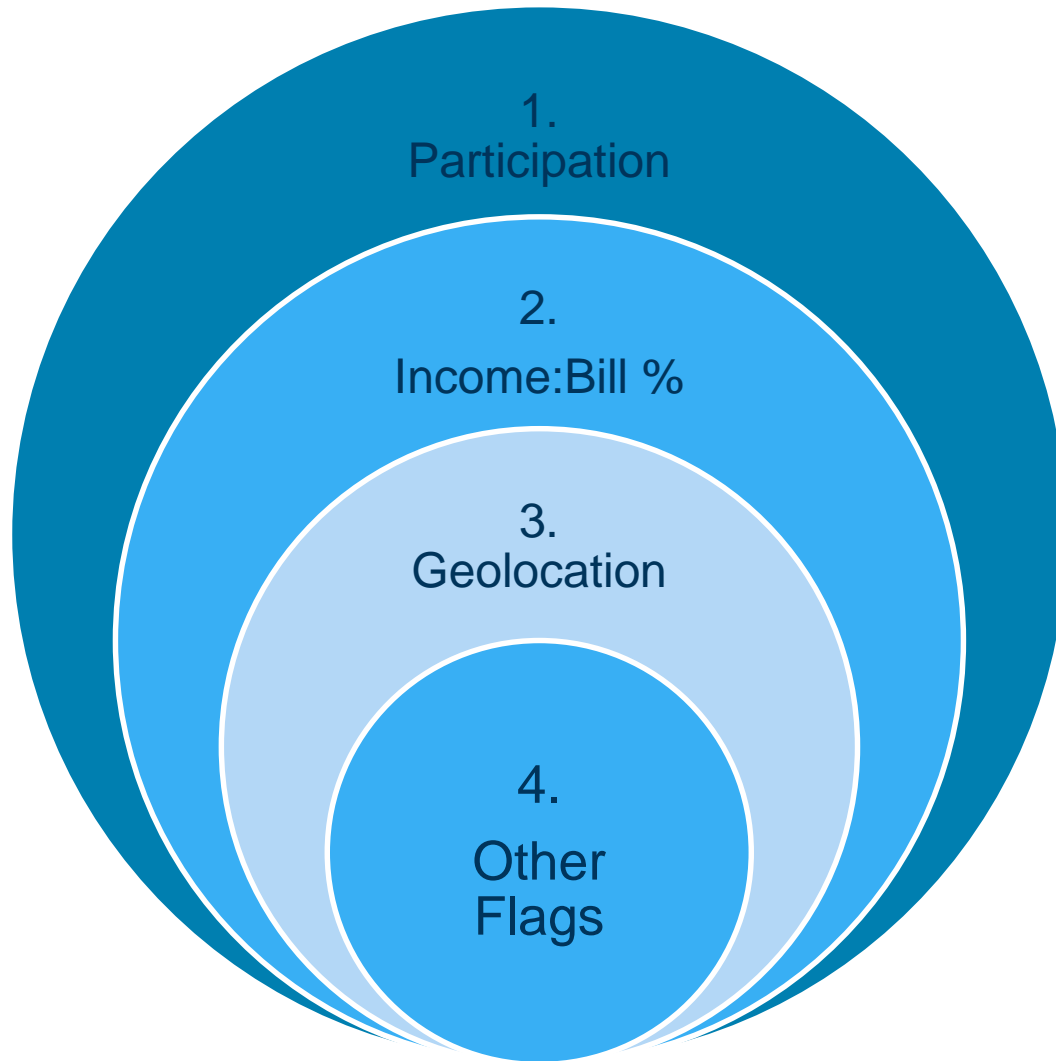
…but there is a bigger picture

1. Participation
2. Income:Bill %
3. Geolocation
4. Other Flags

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<u>Why</u> are they hard-to-reach?

- If we assume that the HTR are acting in their own best interest with the information they have, then *the source of our problem likely is our communication and program design*

- Are we connecting energy efficient program participation to what ***they*** value?

The reasons for unequal program participation are complex

According to the 2016 World Social Science Report, there are seven drivers of inequality in the world:

- Economic
- Social
- Cultural
- Political
- Spatial
- Environmental
- Knowledge

World Social Science Report

2016 | Challenging Inequalities: Pathways to a Just World
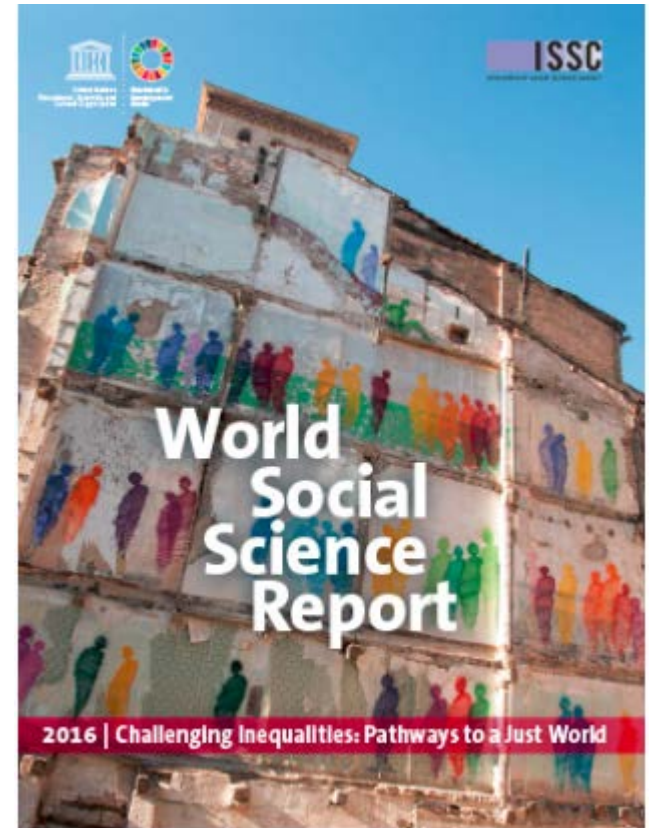
Decoding the impact of these drivers on program participation is key to more equitable program involvement

In summary…

- Newly compiled data & tools can enable us to build a composite picture of the HTR market

- However, the reasons for a lack of program participation can only be partially understood with current data

- A deeper appreciation of our audience's current (complex) HTR drivers will likely improve program participation

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