

# LOCATING ELIGIBLE NEW YORKERS FOR BENEFIT PROGRAMS

Fighting Poverty with the Robin Hood Foundation





“Using the models around the Earned Income Tax Credit, we’ve adopted a more targeted approach. We’ve reached 10,000 people eligible for more than \$15 million in benefits.”

**STEVEN LEE**

Managing Director, Robin Hood

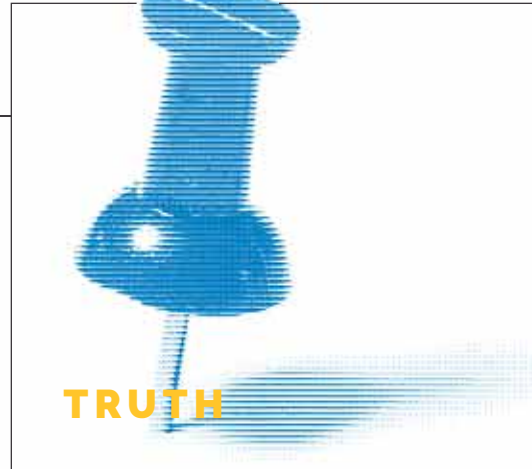
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**ROBIN HOOD**

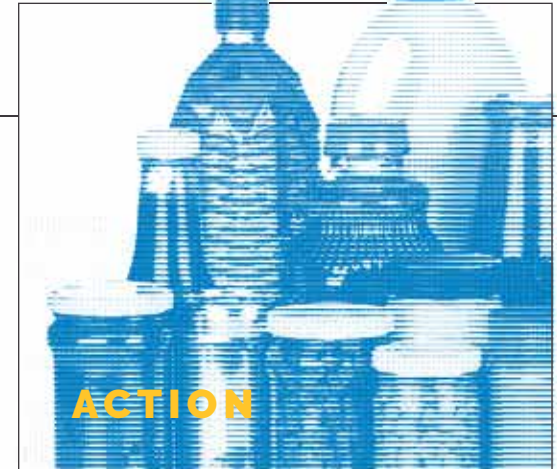
# HOW ROBIN HOOD BUILT A TARGETED MARKETING CAMPAIGN



- Microdata from the American Community Survey
- Internal Revenue Service Earned Income Tax Credit (EITC) claims data
- New York City Open Data
- Aggregated Supplemental Nutrition Assistance Program (SNAP) and EITC participation information



- Modeled EITC and SNAP participation to identify New York neighborhoods with the highest nonparticipation
- Simulated individual SNAP eligibility under a 2016 SNAP policy expansion



- Developed the “Start by Asking” campaign to reach nonparticipants in targeted neighborhoods
- Executed grassroots efforts in neighborhoods with the largest participation gaps

## ALLEVIATING POVERTY

Robin Hood has one objective: Alleviate poverty in New York City. The organization partners with more than 200 nonprofits and identifies ways to help the poor.

One of Robin Hood's key initiatives is increasing participation in two government programs, the Earned Income Tax Credit (EITC) and Supplemental Nutrition Assistance Program (SNAP). To achieve that goal, Robin Hood turned to the data to ask three questions:

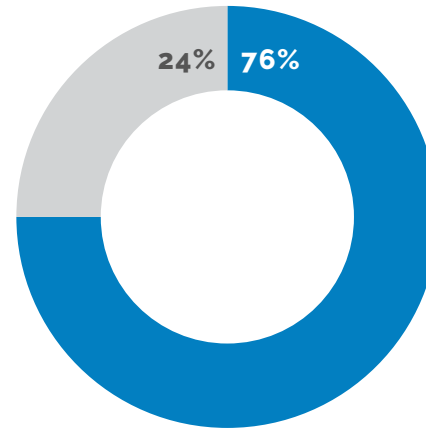
### Who is eligible?

### Where do they live?

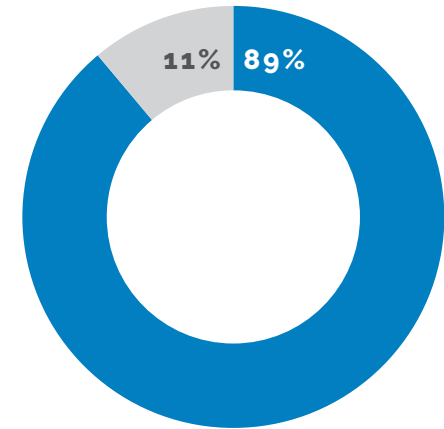
### How can we reach them?

#### PARTICIPATION GAPS IN BENEFIT PROGRAMS

■ ESTIMATED PARTICIPATION GAP ■ ESTIMATED PARTICIPATION RATE



SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM



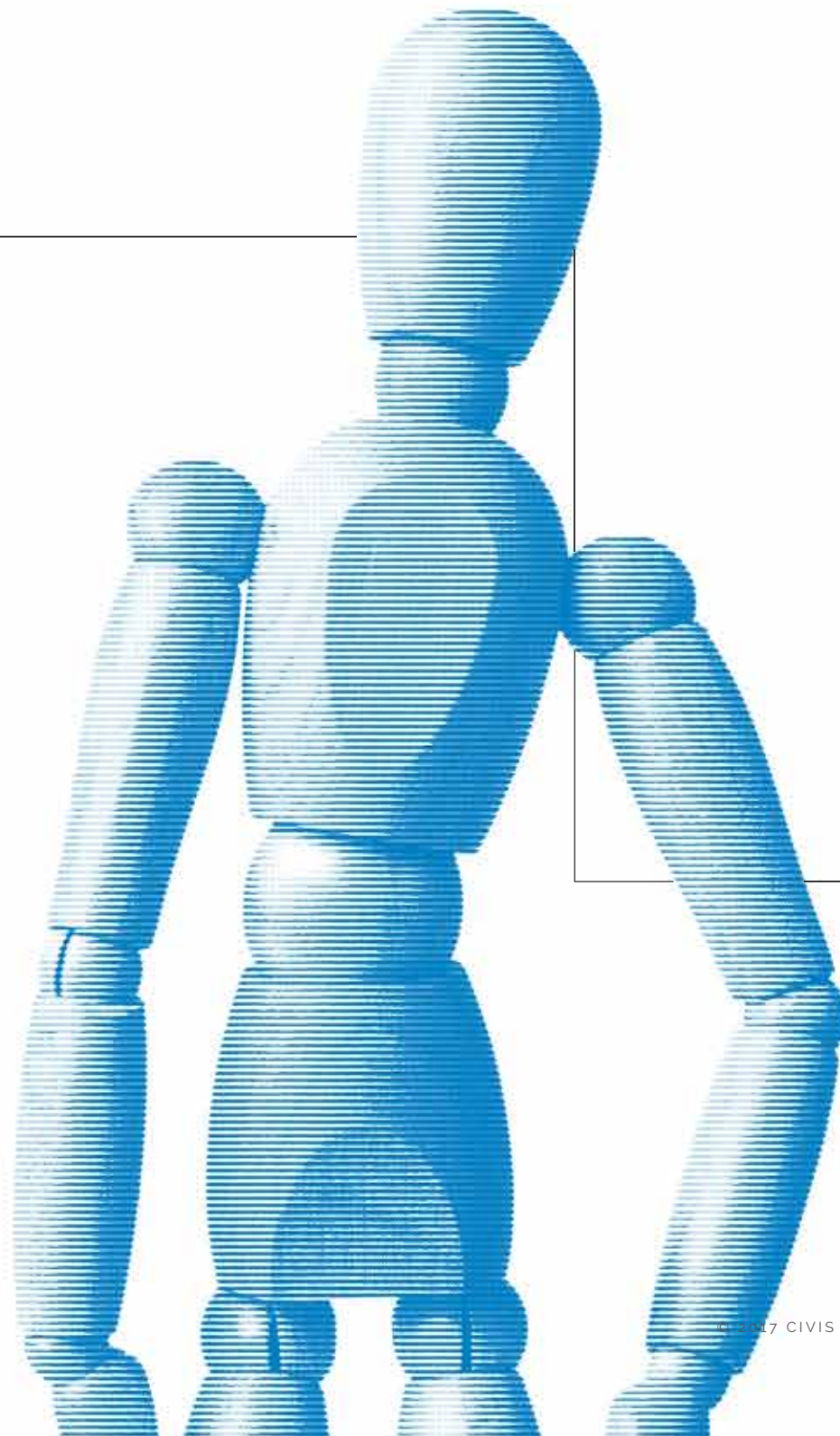
EARNED INCOME TAX CREDIT

## FILLING IN MISSING INFO WITH MODELING

Robin Hood had access to EITC and SNAP enrollment numbers by region and demographic segment, but not individual-level data. They also had little insight into the larger eligible population.

Publicly-available information on participation trends only exist at the state and national level, and eligibility criteria can be complicated to understand at first glance. While survey research is one way to learn more about a population, contacting this hard-to-reach population is incredibly difficult and expensive.

That's when we turned to data science and models.



## BUILDING AND VALIDATING THE MODEL

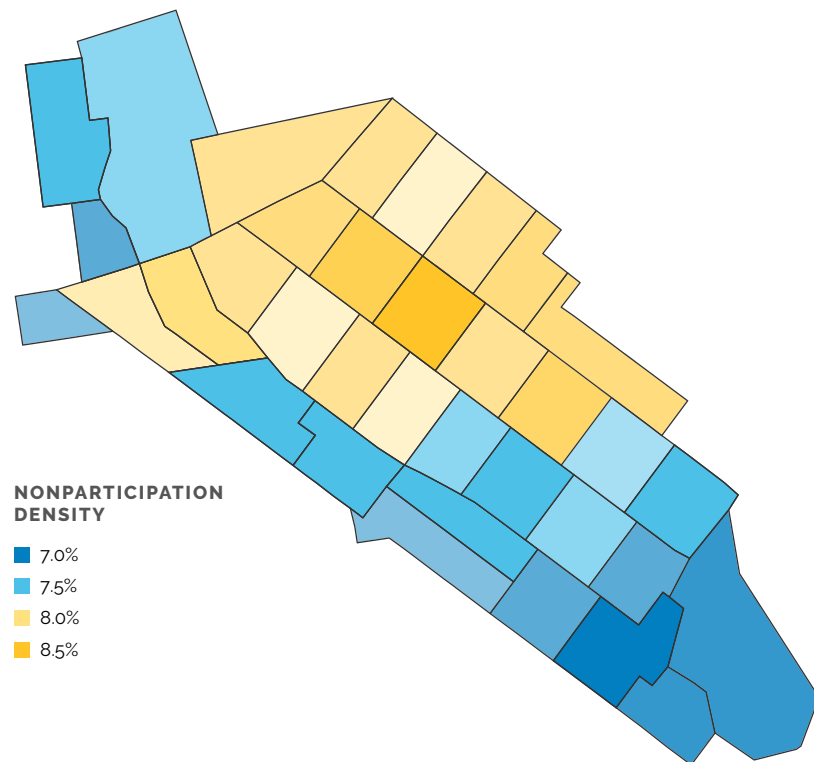
Using anonymized microdata from the U.S. Census Bureau's American Community Survey, we estimated the number of tax filing units and SNAP households in specific geographic areas.

We used the number of households claiming SNAP benefits reported by the NYC Human Resources Administration and the number of tax filing units claiming the EITC, as reported by the IRS, to estimate the participation rate in each geographic area. We further improved the accuracy of our predictions by fitting models on top of the direct estimates from the Census. This had the effect of reducing variability in our predictions and incorporating additional information about the communities.

At this point, the model contained over 500 variables. Because we used the American Community Survey data as its base, Civis was able to decrease variability in the estimates.

### TRACT-LEVEL MAP OF NONPARTICIPATION DENSITY IN BUSHWICK, NY

We validated our methods by rolling up tract estimates to the Public Use Microdata Areas and the city level, and by comparing them visually. We then selected a model that balanced performance and consistency with our PUMA estimates.



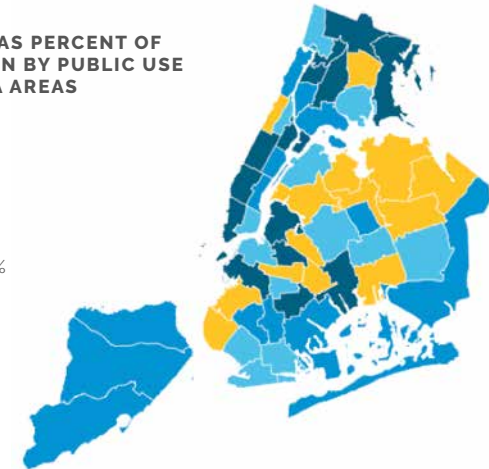
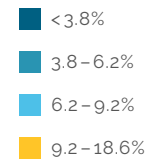
## UNCOVERING THE RIGHT PEOPLE

The model filled in the gaps in the data to find the neighborhoods in NYC that had the highest participation gap and the highest nonparticipation density (defined as the proportion of the total population or tax filing universe that were eligible non-participants).

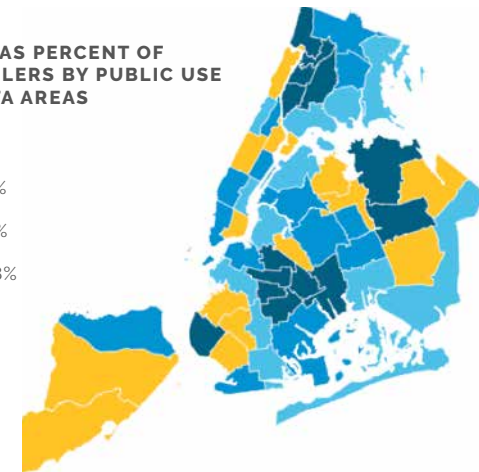
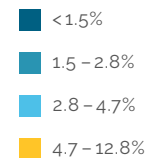
Taking it one step further, the model identified non-participation patterns by key demographics, including the differences between those who do and don't participate.

### NON-PARTICIPATING ELIGIBLE INDIVIDUALS

... IN SNAP AS PERCENT OF POPULATION BY PUBLIC USE MICRODATA AREAS



... IN EITC AS PERCENT OF ALL TAX FILERS BY PUBLIC USE MICRODATA AREAS





# KEEPING FOOD ON THE TABLE

Robin Hood launched its Start By Asking campaign, which uses data to answer questions about the 800,000 New Yorkers who aren't using benefits for which they're eligible.

And that data drives grassroots efforts from Robin Hood and its community and public partners.

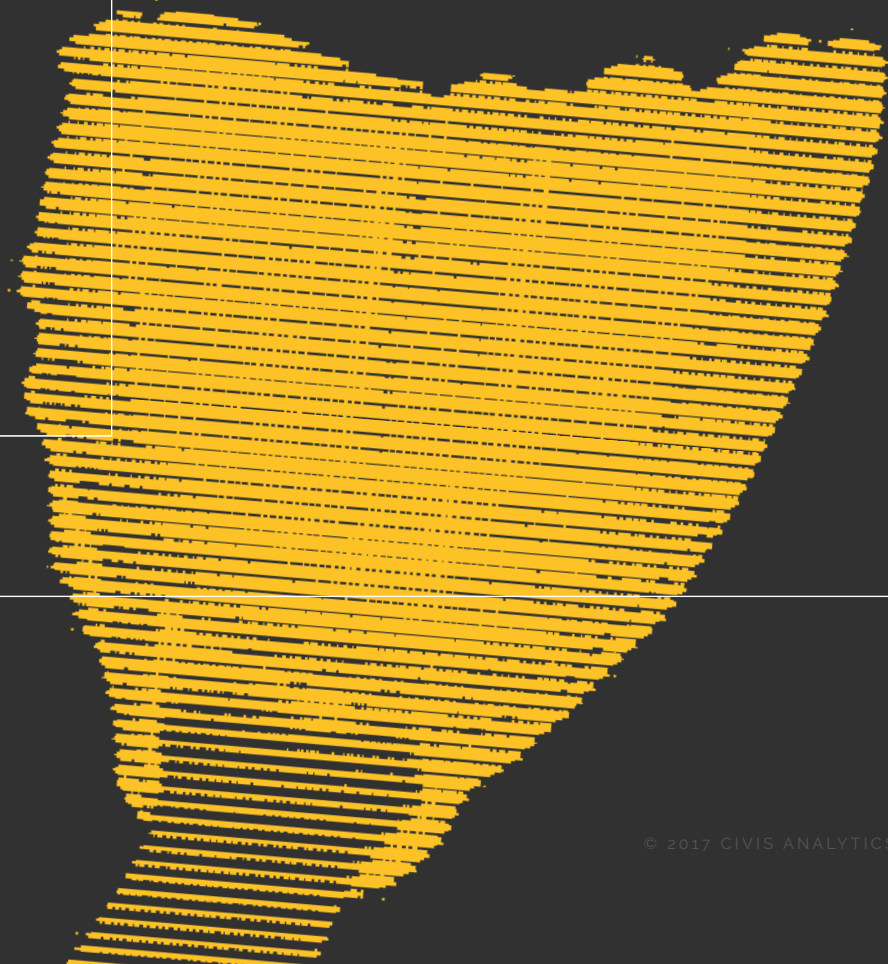
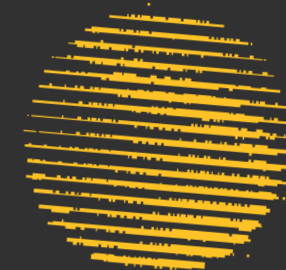
Focusing on the neighborhoods in which the participation gap is highest, Robin Hood has reached 10,000 people eligible for more than \$15 million in benefits. The organization reached that accomplishment with just six volunteers.



“Traditionally, nonprofits use the *Field of Dreams* approach: if you build it they will come. With Civis, we could take a more targeted *Moneyball*-type approach and turned to data to efficiently reach the right people.”

**STEVEN LEE**

Managing Director, Robin Hood Foundation





Learn more about Cavis Analytics software and services  
[www.civisanalytics.com](http://www.civisanalytics.com)

Read more about Robin Hood Foundation and the Start By Asking campaign  
[www.robinhood.org](http://www.robinhood.org)  
[www.startbyasking.org](http://www.startbyasking.org)