Detecting discrimination through correspondence studies: Implementation using web scraping methods.

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Roadmap

Motivation

- Minorities are

    ▸ less likely to be employed (Bertrand and Mullainathan, 2004)

    ▸ more likely to be arrested by the police, receive speeding tickets, to be incarcerated, ... (Goncalves and Mello, 2021)

    ▸ live lower quality housing (Ewens et al., 2014, Carlsson and Eriksson, 2014, Hanson and Hawley, 2011, Ahmed and Hammarstedt, 2008)

    ▸ live lower opportunity neighborhoods (Chetty et al., 2019, Christensen and Timmins, 2018, Christensen et al., 2020)

- Women are very scarce at the top echelon of the corporate, academic, and political ladders despite getting better grades in school and being more likely to graduate from college in rich countries.

Motivation

- Many in the media and public opinion circles argue that discrimination is a key force in driving these patterns.

- Discrimination is defined as members of a minority group (women, Minorities, Muslims, immigrants, etc.) being treated less favorably than members of a majority group with otherwise identical characteristics in similar circumstances.

- Showing convincing evidence of discrimination using standard regression analysis methods and observational data has proven elusive.

Roadmap

Audit and correspondence studies

- Audit or correspondence studies are widely viewed as providing the most convincing evidence on discrimination (`Pager,2007`; `RiachandRich,2002`),

- U.S. courts allow organizations that conduct audit or correspondence studies to file claims of discrimination based on the evidence they collect (`U.S.EqualEmploymentOpportunityCommission1996`).

Roadmap

Housing Discrimination

- Urban segregation is one of the most prevalent social issues.

- Observational data make it difficult to disentangle the multiple factors involved in the residential location choice.

  - ▸ Disparities in income, information, labor maket opportunities, preferences. (Banzhaf et al., 2019, Aliprantis et al., 2019, Logan, 2011, Hausman and Stolper, 2019, Currie and Walker, 2011, Depro et al., 2015, Banzhaf and Walsh, 2013)

  - ▸ Choice constraints "racial discrimination thesis." (Ewens et al., 2014, Carlsson and Eriksson, 2014, Hanson and Hawley, 2011, Ahmed and Hammarstedt, 2008, Christensen and Timmins, 2018, Crowder and Downey, 2010, Logan and Alba, 1993)

Motivation

Housing Discrimination is Illegal

"We are here today because we are tired. We are tired of paying more for less. We are tired of living in rat-infested slums... We are tired of having to pay a median rent of \$97 a month in Lawndale for four rooms while whites living in South Deering pay \$73 a month for five rooms. Now is the time to make real the promises of democracy. Now is the time to open the doors of opportunity to all of God's children."

(Dr. King, 1966, Chicago Soldier Field Stadium as part of the Chicago Open Housing Movement)


Housing discrimination was made illegal under the Fair Housing Act (part of Civil Rights Act of 1968 and 1988 Amendments)

Experiment Set up: Identifying Housing Discrimination

Audit Studies – HDS 1977, 1989, 2000, 2012

1. Paired-tester: Blind-matched actors trained to be identical in every respect except for characteristic of interest (e.g., race)

2. Send teams of actors (white & minority) to real estate offices and rental management companies and record differential treatment

Traditional Way: Audit
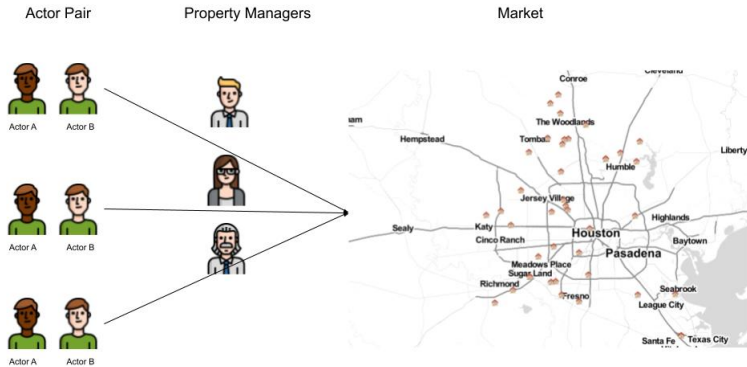
Actor Pair   Property Managers   Market

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2. Send teams of actors (white & minority) to real estate offices and rental management companies and record differential treatment

3. Strong evidence of discrimination in previous reports (Turner et al 2002, 2012)
   1. Most blatant forms (e.g., refusal to show a property) have declined over time
   2. Most persistent form: Steering (Ondrich et al 1998, 2003, 2005, Galster and Godfrey 2005)
      - ★ Minority buyers are steered into neighborhoods with higher exposures to emissions from TRI facilities and Superfund sites (Christensen and Timmins, 2018)

4. Largest sample in 2012, 28 cities, 4,838 properties

Would a "Rose" by any other name get fewer callbacks?

- Correspondence Research Design (Bertrand and Mullainathan, 2004)
  1. Create fictitious identities
  2. Interact with retailers, employers, or housing brokers
  3. Randomly vary racial trait

Traditional Way: Correspondence
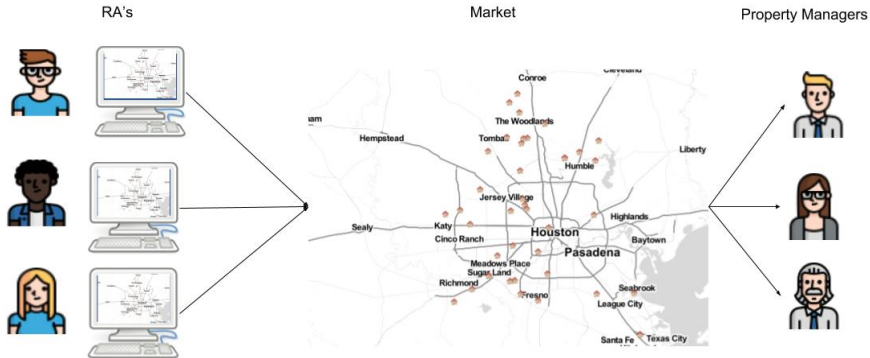
RA's   Market   Property Managers

Would a "Rose" by any other name get fewer callbacks?

- Correspondence Research Design (Bertrand and Mullainathan, 2004)
    1. Create fictitious identities
    2. Interact with retailers, employers, or housing brokers
   3. Randomly vary racial trait

- Advantages of Correspondence Studies (vs Audit Designs)
    1. Correspondence studies give more control to the analyst (Bertrand and Duflo, 2017)
    2. Hard to control for all differences between paired testers (Siegelman and Heckman, 1993, Heckman, 1998)
    3. Less expensive (large, geographically targeted samples)

What we do: EARL

Projects Overview
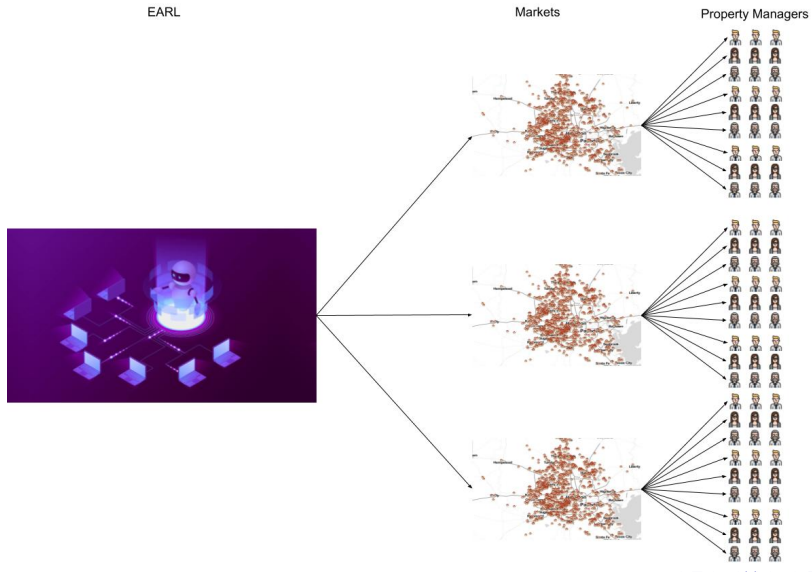
## Does housing discrimination impose constraints to Renters of Color?

- We conducted a set of correspondence studies on online rental housing markets

  1. Housing Discrimination and the Toxics Exposure Gap in the United States: Evidence from the Rental Market *(REStat 2022)*
     - ★ Zip codes with TRI plants above the 80% percentile of emissions
     - ★ Odds for a minority renter are 41% lower in low-exposure locations
     - ★ No statistical difference in odds in high exposure locations
     - ★ Considerably stronger for African American renters, especially for African American men.

  2. Racial Discrimination in the United States Rental Market *(Ongoing and preliminary results)*
     - ★ 50 largest CBSAs
     - ★ Lower response rates for RoC applicants in the majority of markets with important differences across cities
     - ★ Discriminatory constraints are systematically stronger in cities with higher levels of residential segregation and with persistent gaps in intergenerational income mobility.
     - ★ Discriminatory constraints detected in a correspondence experiment predict population-level outcomes in the rental housing market.

What we do

1. Create fictitious identities, where we randomly vary racial perceptions through names
   - 18 first-last name pairs that have a high likelihood to be associated with each of 3 racial categories
   - 3 races: African American, Hispanic/LatinX, and White Gaddis (2017a,b)
   - 2 genders: male and female
   - 3 education levels: low, medium, high

2. Interact with landlords
   - Record responses via email, phone, and text messages
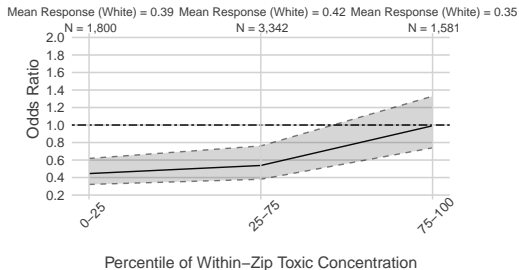
Discrimination and Toxic Exposure *(RESTAT, 2022)*
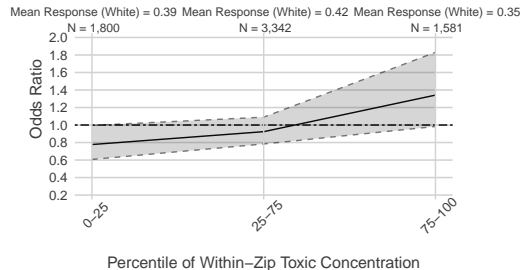
Experimental Design
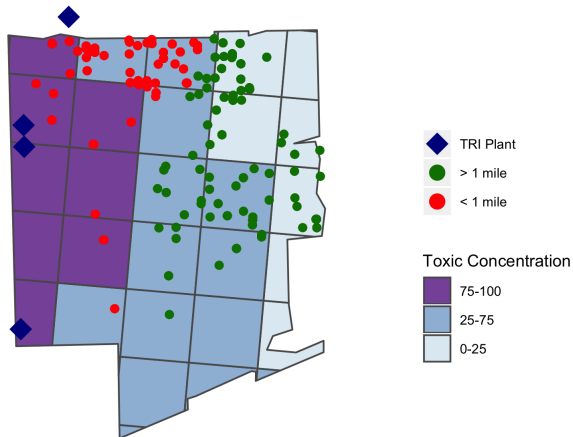
Discrimination and Toxic Exposure *(RESTAT, 2022)*

Results: Odds for a minority renter are 41% lower in low-exposure locations

Figure: Odds Ratio by Within-ZIP Toxic Concentration

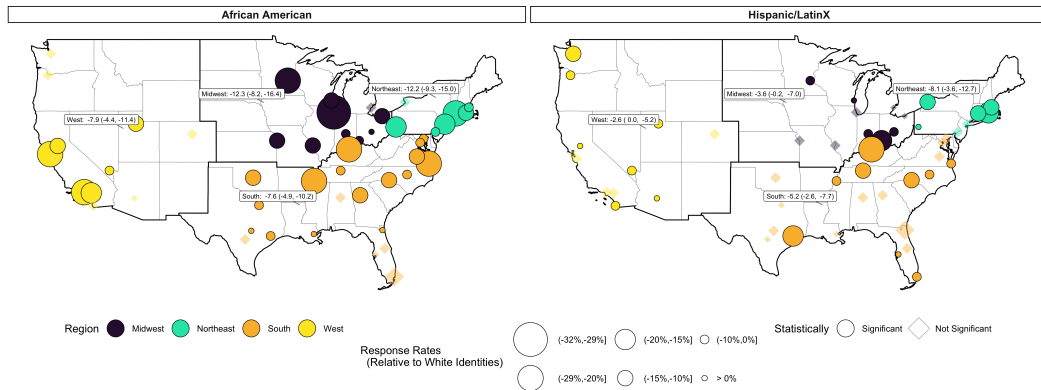(a) African American
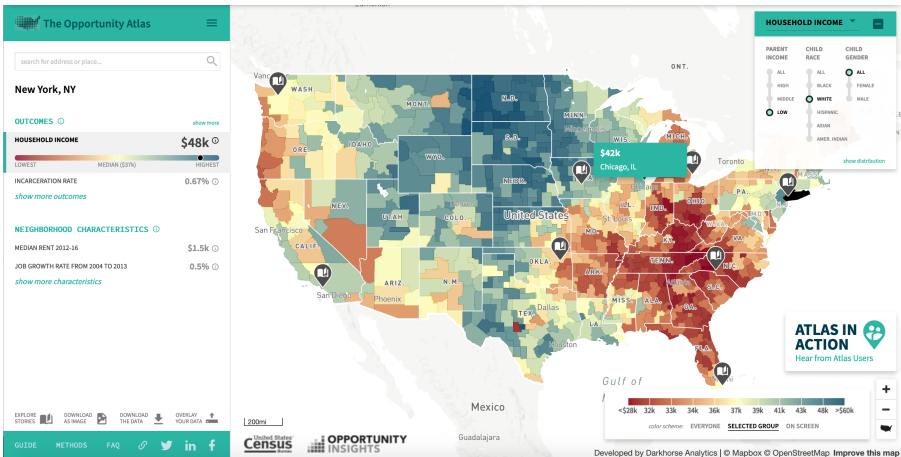

(b) Hispanic/LatinX

The Geography of Discriminatory Behavior in the US

Figure: Response Rates CBSAs

Discriminatory Behavior and the Income Mobility Gap

Source: https://www.opportunityatlas.org/

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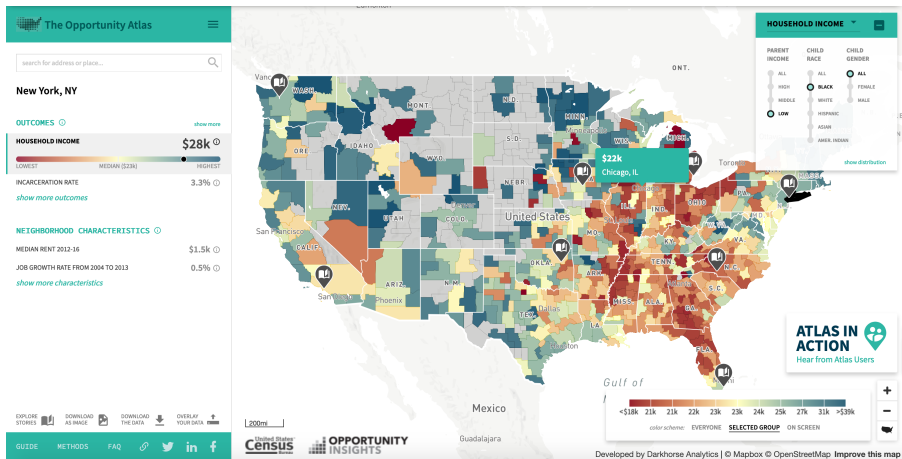
Discriminatory Behavior and the Income Mobility Gap

Roadmap

Demo

photo from https://www.dailydot.com/parsec/batman-1966-labels-tumblr-twitter-vine/
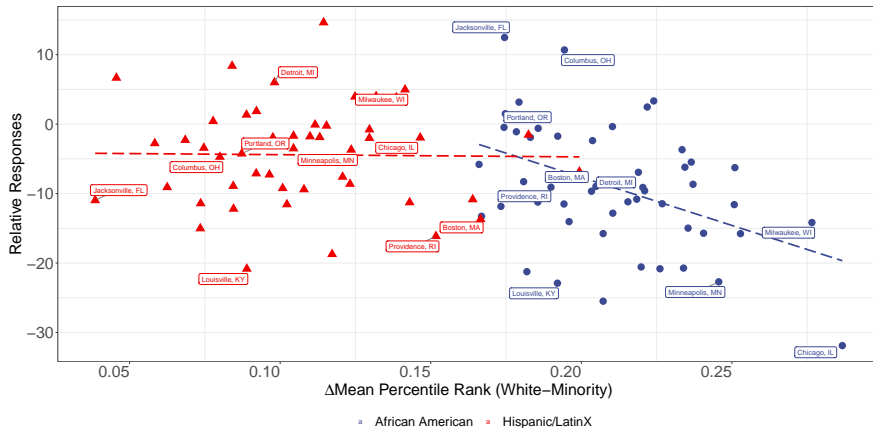
Thanks!

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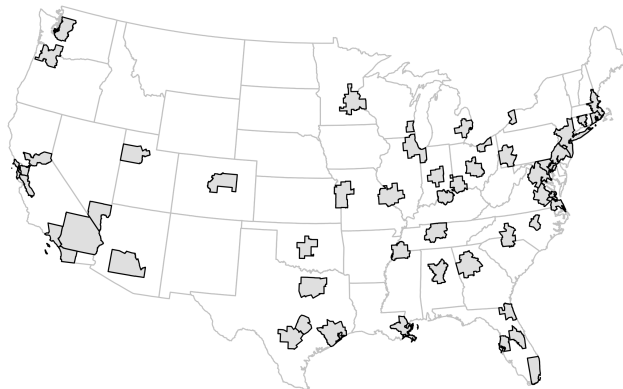
Experiment design

Sample of Markets

- 50 Largest CBSA's ($\sim$ 50% of US population)

Experiment design

Figure: CBSA's in Experiment

Experiment design

Sample of Markets

- 50 Largest CBSA's ($\sim 50\%$ of US population)
- First day a listing is active we send an inquiry
  - Scrape all listing characteristics
  - Randomly assign one of 18 names that are associated with racialized perceptions of African American, Hispanic/LatinX, and white social groups in US (Gaddis, 2017a,b)

Experiment design

Panel A. Identification Rates from Gaddis (2017a,b) (%)				
Race	First Name	No Last Name	Last Name Included	Quartile mother's education
African American	Nia	41	65	High
African American	Jalen	63	71	High
African American	Ebony	91	95	Med
African American	Lamar	88	94	Med
African American	Shanice	93	92	Low
African American	DaQuan	91	96	Low
Hispanic/LatinX	Isabella	48	98	High
Hispanic/LatinX	Jorge	86	98	High
Hispanic/LatinX	Mariana	78	99	Med
Hispanic/LatinX	Pedro	98	99	Med
Hispanic/LatinX	Jimena	49	97	Low
Hispanic/LatinX	Luis	83	99	Low
White	Aubrey	90	93	High
White	Caleb	77	84	High
White	Erica	82	93	Med
White	Charlie	86	91	Med
White	Leslie	72	93	Low
White	Ronnie	71	89	Low

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  - 3 male/female, 1 high/medium/low maternal educational attainment
  - Continue for the following 2 days with the remaining races

Experiment design

Contact This Property

Property Manager

~~(858) 879-8799~~

Name	Phone

Email

Message
I am interested in this rental and would like to schedule a viewing.

Experiment design

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- Record Responses (1 if responded with availability), 0 o.w.
    - email
    - phone
    - text sms

- Final sample: $25,428$ inquiries ($\sim 8,477$ properties)