



# Going the Distance? Bank— Customer Proximity, Applicant Demographics, and Credit Access

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# Today's banking landscape

## Branch networks shrinking

- Amberg & Becker (2024); Keil & Ongena (2024); Adams & Sherlund (2025)
- 18% decline between 2013–2022
- Bank-customer distance growing

## Research Questions:

- Does proximity matter for mortgage applicants?
- Does it matter equally for all mortgage applicants?

# Effects of proximity in banking

Proximity improves **commercial lending outcomes**

- Petersen and Rajan (2002), Degryse and Ongena (2005), De Young, Glennon, & Nigro (2008), Agarwal and Hauswald (2010), Knyazeva & Knyazeva (2012), Bellucci et al. (2019), and many others.

By allowing banks to better gather and process **soft-information (SI)**

Logic might not hold for mortgages

- Home mortgages are usually **hard information** loans (Rajan, Seru, & Vig, 2015; Liberti and Petersen, 2018; Foote, Loewenstein, and Willen, 2019)
- SI less valuable because **most mortgages are sold**, weakening screening and monitoring incentives (Keys et al., 2010; Purnanandam, 2011; Choi and Kim, 2021)
- 75% of customers primarily use **mobile/online banking** (ABA 2025)

Mixed evidence

- Distance does not matter (Nguyen, 2019)
- Distance improves mortgage outcomes (Mayer, 2024; Hampole et al., 2025)

# Banking outcomes may differ for minorities

## Minorities already lack branch access

- Access, not take up explains Black-White difference in branch use (Sakong & Zentefis, 2025)
- Minority areas disproportionately banking deserts (Barca and Hou, 2024)

## Minorities experience:

- Lower approvals (Munnell et al., 1996; Crosignani and Le, 2024)
- Higher spreads (Bartlett et al., 2022; Willen and Zhang, 2023)
- Longer processing times (Wei and Zhao, 2022)

Disparities dissipate with info (Han, 2011; Tran & Winter, 2025)

# Results

RQ1: Does proximity predict mortgage approval?

- Proximity  $\uparrow$  Approval Rate, including in several causal tests

RQ2: Do effects differ for minorities?

- Twice as strong for minorities

Minority effects stronger when SI matters more:

- Less standard loan type (HI vs. NPO & Refi)
- More consequential underwriting (retained vs. sold)
- Less SI in banks' possession (giant vs. community banks)
- Riskier applicants (higher credit spreads, lower retention, higher loan costs)
- SI getting lost (branches exiting)

Stronger results in areas with less trust/more bias

# Our contribution/innovation

Help reconcile small, conflicted lit on proximity and mortgages

Proximity's incremental effect on minorities

Proximity could counteract racial/ethnic disparities in lending

(Munnell et al., 1996; Bhutta and Hizmo, 2021, Ambrose et al., 2021; Bartlett et al., 2022; Wei and Zhao, 2022; Jo and Liu, 2024; Hurtado and Sakong, 2024; Frame et al., 2025; Bhutta, Hizmo, and Ringo, 2025; Ambrose et al., 2026)

# Data Sources

Proximity measure (2022 SafeGraph/Advan)

- POI name and latitude/longitude



Linked via 2022 Summary of Deposits

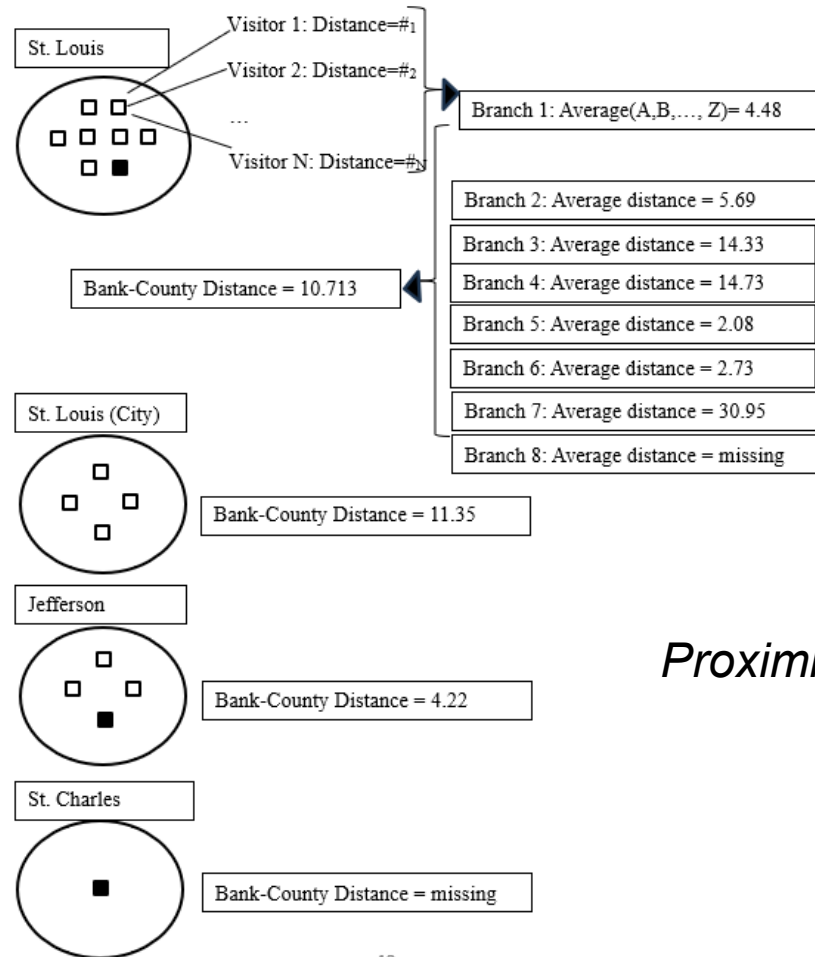
Bank name, latitude/longitude, bank identifier



Approvals, demographics & all else (2022 HMDA)

- Bank identifier

# Visual



$$Proximity = -\ln(Distance)$$

# Sample Overview

1.26M applications | 821 banks | 51,073 branches | 2,318 counties | 76,649 census tracts | All 50 states

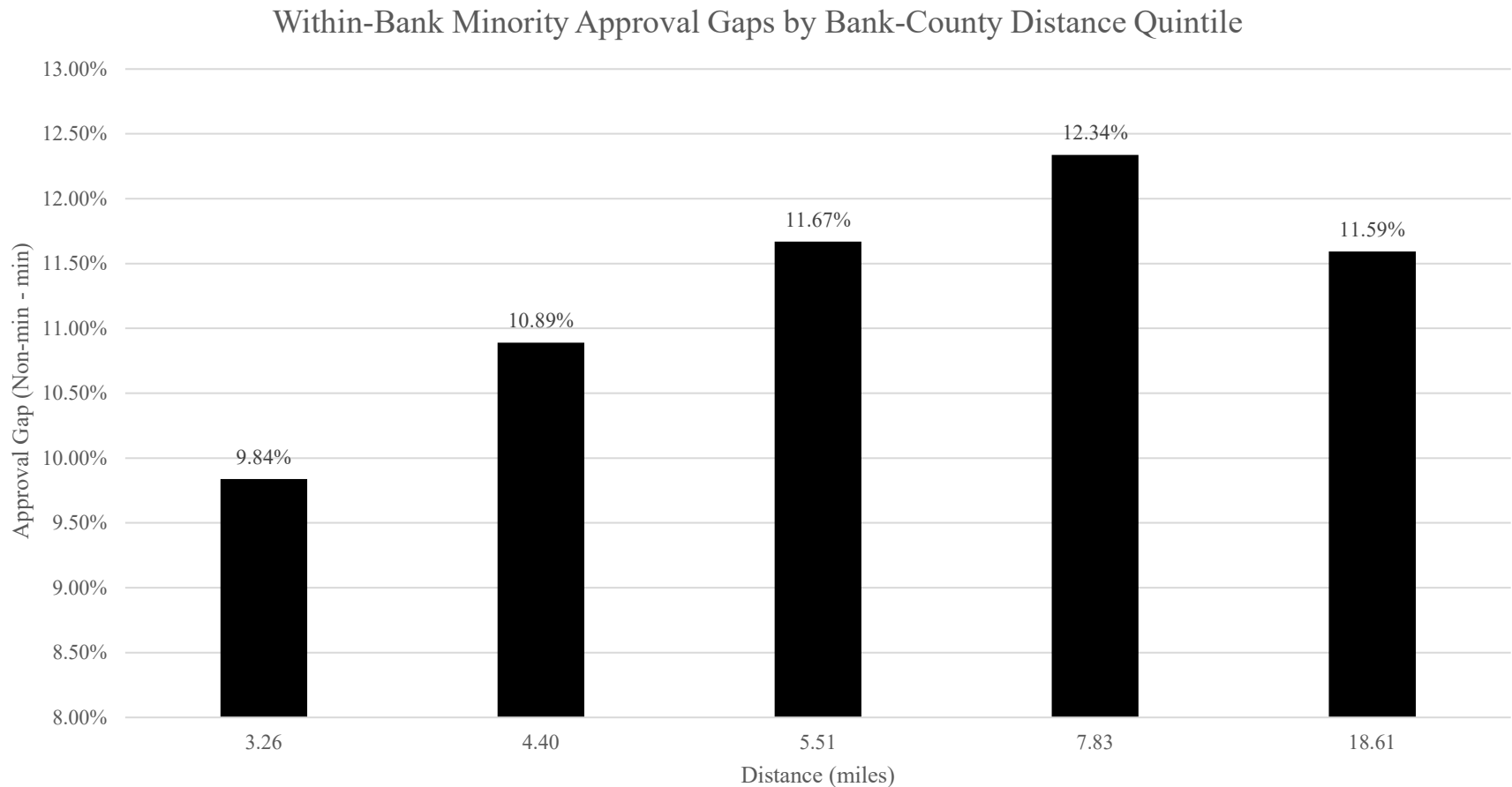
- 84% of HMDA-covered banks included

## Key stats

- 32% of apps from minorities
- 76% approved (66% minorities; 80% non-minorities)
- 8.3 miles (8.5 minorities; 8.1 non-minorities)

# Result in 2 graphs, pt. 1

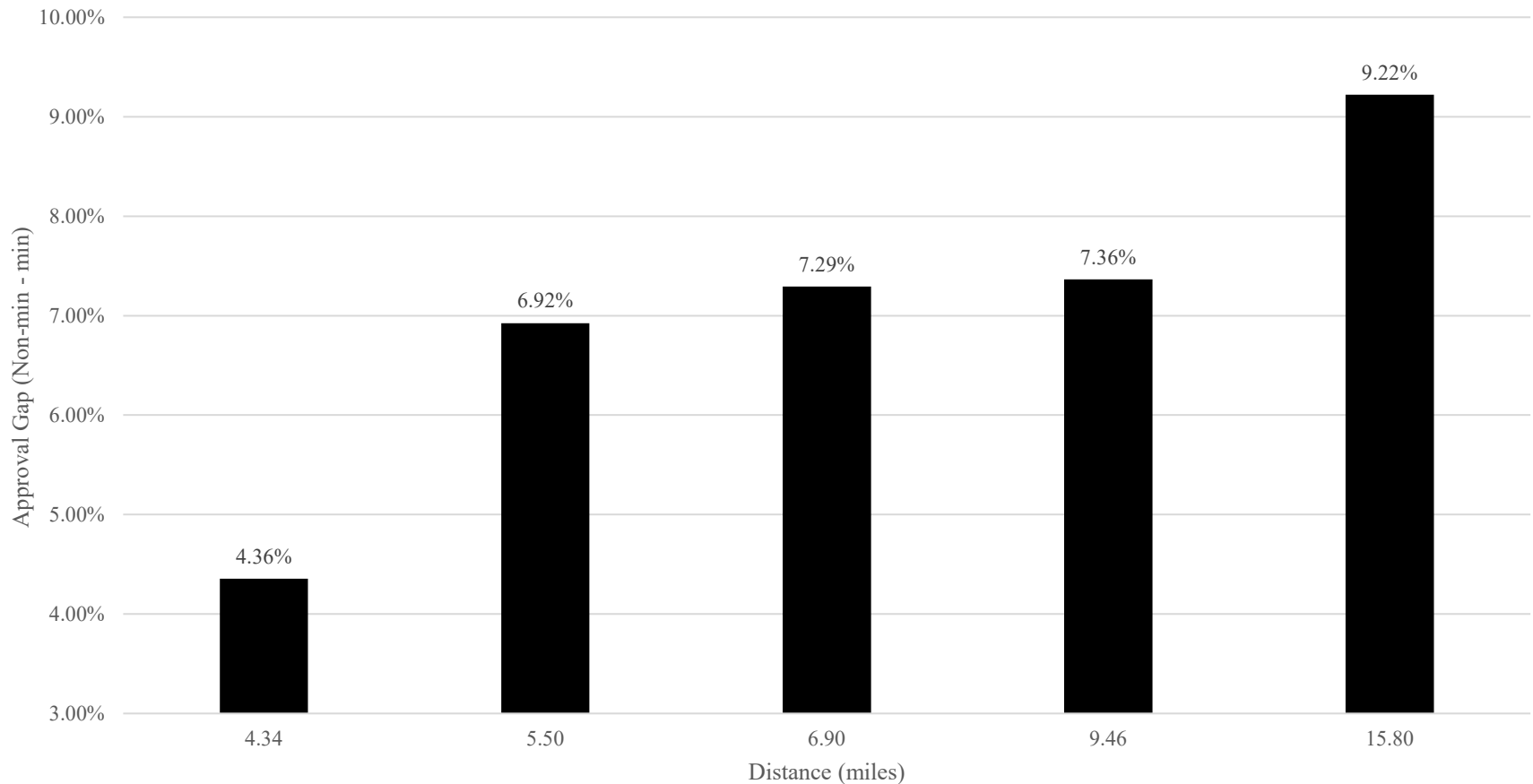
Within **bank**, sort counties by distance quintile, find min/nonmin approval gap



# Result in 2 graphs, pt. 2

Within **tract**, sort applications by distance quintile, find min/nonmin approval gap

Within-Tract Minority Approval Gap by Bank-County Distance Quintile



# Linear probability model with bank and tract fixed effects

$$Approved_i = \beta_1 Proximity_{b,c} + \beta_2 Minority_i + \beta_3 Proximity_{b,c} \times Minority_i + \gamma X_i \times Minority_i + \delta_b + \mu_t + \varepsilon$$

- $\beta_1$  : Does proximity affect approvals?
- $\beta_3$  : Does it affect minority approvals differently?
- $\delta_b$  : Bank FEs compare the same bank's approval decisions across counties where its customers are closer vs. farther. Absorbs underwriting standards, risk appetite, business model and other bank-level contaminants.
- $\mu_t$  : Tract FEs compare applicants from the same neighborhood. Absorbs local wealth, minority share, credit access, and other tract-level contaminants (e.g., no 'hoods' vs. gated communities comparison).
- $X \times Minority$ : Fully specified controls allow effect of each to differ between minorities and nonminorities.

# Linear probability model

|                      | (1)<br>Approved     | (2)<br>Approved      | (3)<br>Approved      |
|----------------------|---------------------|----------------------|----------------------|
| Proximity            | 0.011***<br>(0.001) |                      | 0.009***<br>(0.001)  |
| Minority             |                     | -0.056***<br>(0.001) | -0.142***<br>(0.019) |
| Proximity × Minority |                     |                      | 0.008***<br>(0.001)  |
| Observations         | 1,228,721           | 1,128,114            | 1,128,097            |
| Adj R <sup>2</sup>   | 0.299               | 0.302                | 0.305                |
| Bank + Tract FE      | Yes                 | Yes                  | Yes                  |

WNH (min) applications to branch with closer customers 0.61% (1.15%) more likely to be accepted.

# Are relationships causal?

## Baseline safeguards:

- Proximity built from general pop of branch visitors, not specific applicants (so SI measure, not 'matching')
- Bank & Tract FE (eliminate bank- and tract-level confounds)

## Further evidence:

- Within tract, match sample of minority to nonminority applicants
- Within tract, match sample of more-distant-bank to more-proximate-bank applicants
- Instrumenting for proximity=SI with 15-year-ago local market share
- Absorbing banks' different policies across different (larger, richer, more competitive) markets

## If relationships causal, should strengthen where SI matters most:

- Nonstandard loan products (hard info harder to use)
- Retained mortgages (underwriting matters more)
- Largest banks (don't accumulate SI through normal business).
- Riskier applicants

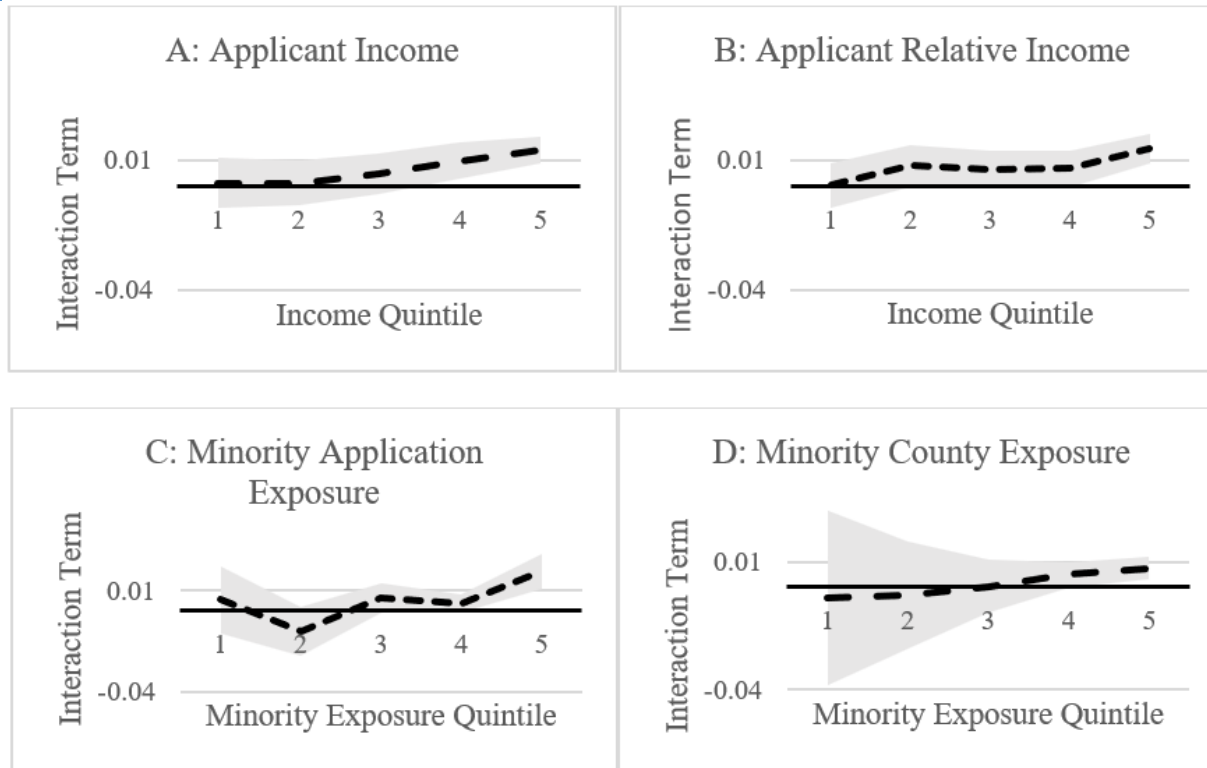
# Can proximity reduce discrimination?

We can't answer that!

But...if it can...

- **Statistical discrimination:**
  - Not great: Minority useful proxy for credit-relevant factors when banks are information-scarce
    - Incremental minority effect stronger if applicants poorer and banks less experienced lending to minorities
- **Taste-based discrimination:**
  - Bad: Bankers may not trust minorities as much
    - Incremental minority effect stronger if trust lower
  - Worse: Bankers just don't like minorities
    - Incremental minority effect stronger if hate crimes per capita higher

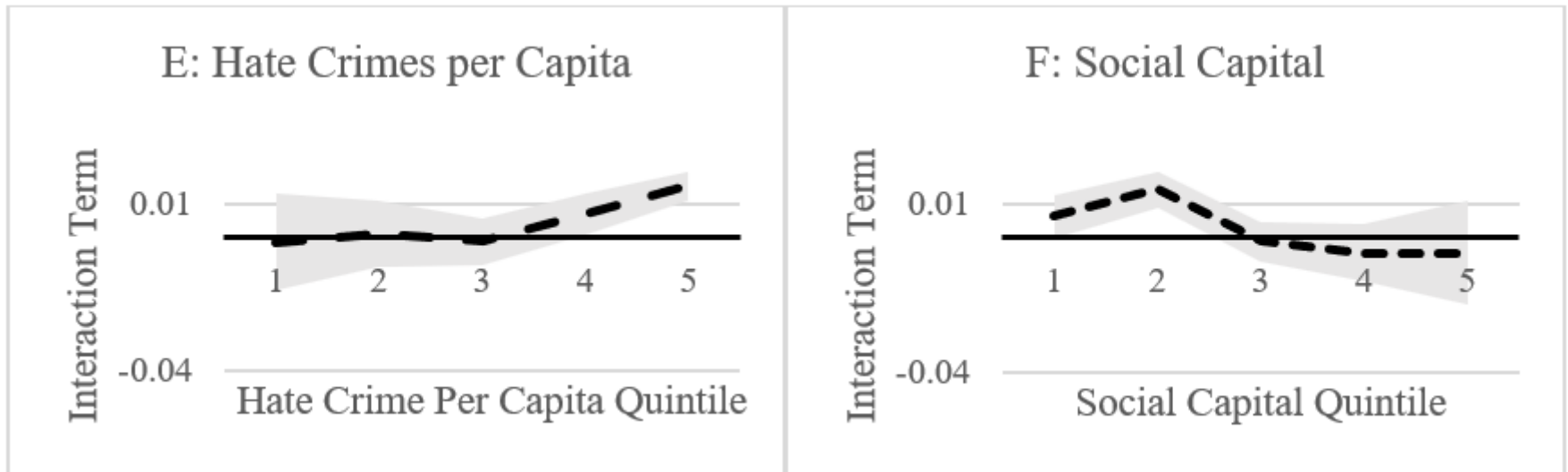
# Does proximity reduce statistical discrimination?



Incremental minority effect for rich minorities and for banks with ample minority experience

Inconsistent with proximity reducing statistical discrimination

# Does proximity reduce taste-based discrimination?



Incremental minority effect for counties with less trust and more hate crimes per capita

Consistent with proximity reducing taste based discrimination

# Conclusions

- Proximity predicts better credit access, especially for minorities
  - Multiple tests support a causal interpretation
  - Results concentrated where theory says SI matters most
- Minorities benefit most in high-animus, low-trust counties
  - TBD not SD
- Proximity helps harder-to-assess minority applicants enter the approved pool

# Policy Implications

Branch closures can widen access gaps

Regulators might consider proximity in CRA evaluations

Targeted support for branch presence, mobile or part-time branches in banking deserts