# Seeing is Believing:
# Identity, Inequality, and the Impact of Television on the Hispanic Achievement Gap

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February 2022

# Motivation

- ▶ Hispanics in the US face large obstacles. Compared to white people, they are:
    - ▶ **60%** less likely to complete college,
    - ▶ **68%** less likely to found a business,
    - ▶ and earn **24%** less than white men

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  ► and earn **24%** less than white men
► **50%** of Hispanics watch satellite or broadcast Spanish Language TV (SLTV)

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  ▶ **60%** less likely to complete college,
  ▶ **68%** less likely to found a business,
  ▶ and earn **24%** less than white men
▶ **50%** of Hispanics watch satellite or broadcast Spanish Language TV (SLTV)
▶ Large literature on how TV affects behavior (Yanigazawa-Drott 2014; DellaVigna & al. 2007; Ferrara & al., 2012)
▶ Prior efforts to study Hispanic interaction with media focused on politics (Waldfogel & al. 2009; Trujillo & al. 2012)

## This project:

Examine the effect of SLTV in two domains:

1. Education: Hispanic performance in schools
2. Commercial: Hispanic firm ownership

► Goal: To show that SLTV improves outcomes for Hispanics, and that these effects (at least partially) stem from an identity mechanism

# This project:

Examine the effect of SLTV in two domains:

1. Education: Hispanic performance in schools
2. Commercial: Hispanic firm ownership

- ▶ Goal: To show that SLTV improves outcomes for Hispanics, and that these effects (at least partially) stem from an identity mechanism
- ▶ Identification: follow Velez & Newman (2019) and construct spatial RD arising from FCC TV signal regulation
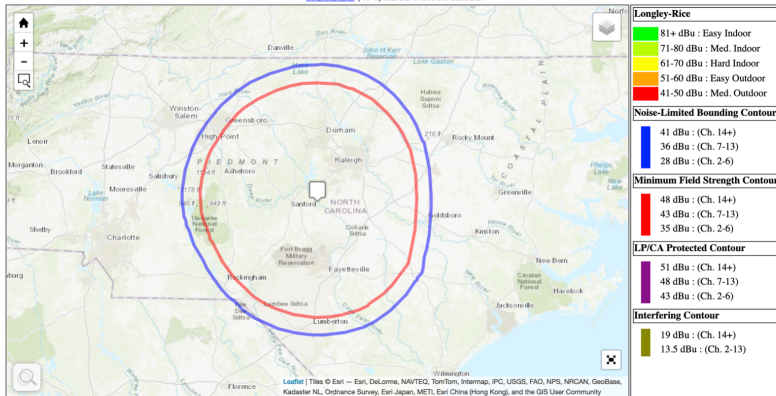
# Contribution

- ▶ Existing work on Hispanic communities often geographically constrained & media studies only concerned with effect on politics (Velez & Newman 2019; Trujillo & al. 2012).

- → Identify causal effect on larger scale and with more granularity (geocoded microdata)

- → Provide a first look at how media affects business and schooling outcomes for Hispanics

- ▶ Existing research that shows identity is a powerful mechanism driving meaningful outcomes (Benjamin & al. 2007; Bursztyn & al. 2015). New research on how identity is constructed and strengthened (Atkin & al. 2019; Bazzi & al. 2019)

- → Show how identity can be bolstered by the media and how it can help reduce inequality

# Coverage Map for TV Station WUVC-DT

**Coverage Maps**

**WUVC-DT** (40-1) BLCDT-20060912ACZ



| Longley-Rice | |
|---|---|
| 🟩 | 81+ dBu : Easy Indoor |
| 🟩 | 71-80 dBu : Med. Indoor |
| 🟨 | 61-70 dBu : Hard Indoor |
| 🟧 | 51-60 dBu : Easy Outdoor |
| 🟥 | 41-50 dBu : Med. Outdoor |

| Noise-Limited Bounding Contour | |
|---|---|
| 🟦 | 41 dBu : (Ch. 14+) |
| 🟦 | 36 dBu : (Ch. 7-13) |
| 🟦 | 28 dBu : (Ch. 2-6) |

| Minimum Field Strength Contour | |
|---|---|
| 🟥 | 48 dBu : (Ch. 14+) |
| 🟥 | 43 dBu : (Ch. 7-13) |
| 🟥 | 35 dBu : (Ch. 2-6) |

| LP/CA Protected Contour | |
|---|---|
| 🟪 | 51 dBu : (Ch. 14+) |
| 🟪 | 48 dBu : (Ch. 7-13) |
| 🟪 | 43 dBu : (Ch. 2-6) |

| Interfering Contour | |
|---|---|
| 🟦 | 19 dBu : (Ch. 14+) |
| 🟨 | 13.5 dBu : (Ch. 2-13) |

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# Empirical Strategy

- ▶ OET Bulletin No. 69 — protect TV stations in (50,90) coverage contour areas
  - ▶ Mechanical formula based on geographic/technical factors (not political/economic)
  - ▶ Fairly large boundaries that typically cut through small towns/suburbs
  - ▶ Purchase/constructed antennas prior to 1977
- ▶ Spanish Language TV: Isolate effect on Hispanic communities
- ▶ Both RD and instrument with distance
  - ▶ Keep observations within 100 KM of boundary for comparability
  - ▶ Fuzzy RD: only protection from interference + distance effect

# SLTV Coverage Maps for the USA
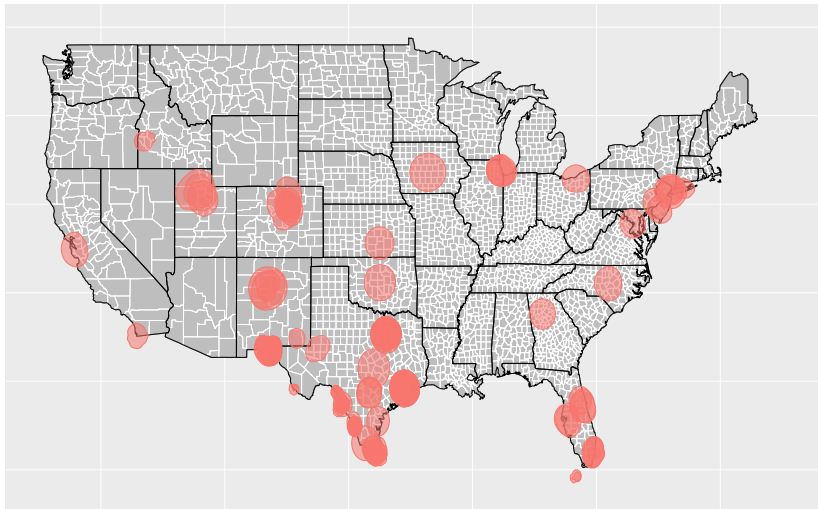
# Empirical Specification

**Main Model:**

$$Y_i = \beta_0 + \beta \mathbb{I}[InsideContour_i] \times Distance_i + \gamma X_i + \epsilon_i$$

where $i$ is a unit of observation (i.e. a school) or one tile on a grid map (with firms)

Place focus on the RD, dummy for whether observation falls inside contour

# Data - General

- ▶ Instrument:
  - ▶ Identify 100 Spanish Language TV stations across the US from TMS
  - ▶ Station contours and other station data from the FCC (use data from 2015 for consistency with outcomes)
- ▶ Geocoding:
  - ▶ ArcGIS: 99%+ successfully geocoded, but data limit (schools)
  - ▶ US Census Geocoder: 80% successfully geocoded (firms)
- ▶ Demographic and migration information at county level from ACS

# Selection? Migration?

| Panel A: Origin County Inside Contour | IHS(# Hispanic Migrants) | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Dummy: Destination Outside TV Contour | −0.387*** | −0.286*** | −0.280*** |
| | (0.048) | (0.044) | (0.044) |
| TV Dummy × Distance to Origin | −0.003** | −0.004*** | −0.004*** |
| | (0.001) | (0.001) | (0.001) |
| TV Dummy × Distance to Destination | 0.001 | −0.002* | −0.002 |
| | (0.001) | (0.001) | (0.001) |
| Distance from Contour to Origin (KM) | 0.001 | 0.003* | 0.003 |
| | (0.002) | (0.002) | (0.002) |
| Distance from Contour to Destination (KM) | −0.001 | 0.002 | 0.002 |
| | (0.001) | (0.001) | (0.001) |
| Observations | 8,479 | 8,479 | 8,479 |
| **Panel B: Origin County Outside Contour** | | | |
| Dummy: Destination Inside TV Contour | −0.078 | −0.123 | −0.120 |
| | (0.108) | (0.096) | (0.096) |
| TV Dummy × Distance to Origin | −0.003* | −0.004*** | −0.004*** |
| | (0.002) | (0.001) | (0.001) |
| TV Dummy × Distance to Destination | −0.004*** | −0.002 | −0.002 |
| | (0.001) | (0.001) | (0.001) |
| Distance from Contour to Origin (KM) | −0.0003 | 0.001 | 0.001 |
| | (0.001) | (0.001) | (0.001) |
| Distance from Contour to Destination (KM) | −0.001*** | −0.001*** | −0.001*** |
| | (0.0002) | (0.0003) | (0.0003) |
| Observations | 4,062 | 4,062 | 4,062 |
| Log(Population) | Yes | Yes | Yes |
| County % Hispanic | No | Yes | Yes |
| Log(Income) | No | No | Yes |

*Notes:* County-county data with origin F.E.

# Evidence of first stage

- ▶ Data from American Time Use Survey over last 15 years:
  - ▶ 210,000 person-year observations
  - ▶ Median person watches 120 minutes of TV per day

- ▶ Not the most satisfactory data:
  - ▶ County-level data is noisy for RD approach
  - ▶ Only overall TV viewership data, not SLTV

# TV Viewership within the SLTV Boundary

| Panel A: Minutes of TV watched | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| TV Dummy $\times$ Hispanic | 13.610*** | 14.638*** | 8.777** | 7.911** |
| | (3.825) | (3.831) | (3.834) | (3.829) |
| TV Dummy | −1.170 | −1.392 | 4.096** | 5.030** |
| | (1.944) | (1.945) | (1.960) | (1.958) |
| Observations | 91,315 | 91,315 | 91,315 | 91,315 |
| County % Hispanic | No | Yes | Yes | Yes |
| Log(Income) | No | No | Yes | Yes |
| Person is Migrant | No | No | No | Yes |

*Notes:*

# Schools

# Schools

- ► Data from Department of Education's Civil Rights Data Collection in 2015:
  - ► 48,000 public schools in sample (unit of observation)
  - ► (Almost) all variables split by ethnicity
- ► Educational Attainment
  - ► Gifted Program Enrolment
  - ► AP Program Enrolment and Exam Passes
  - ► Limited English Proficiency (LEP)
- ► Discipline
  - ► Out of School Suspensions
  - ► Chronic Absentees
  - ► Ethnicity-Based Bullying/Harassment

# Schools - Summary Statistics - Outcomes

|  | *All* | *No TV* | *TV* |
|---|---|---|---|
|  | (1) | (2) | (3) |
| Panel A: Schools |  |  |  |
| IHS(Hispanic Gifted Students) | 1.988 | 1.262 | 2.380 |
|  | (1.552) | (1.238) | (1.563) |
| IHS(Hispanic AP Enrolment) | 3.192 | 2.091 | 3.778 |
|  | (1.937) | (0.646) | (0.918) |
| IHS(Hispanic AP Passes) | 4.087 | 3.497 | 4.181 |
|  | (0.917) | (0.646) | (0.918) |
| IHS(Hispanic Suspensions) | 0.957 | 0.676 | 1.102 |
|  | (1.273) | (1.044) | (1.353) |
| IHS(Hispanic Absentees) | 2.655 | 1.881 | 3.054 |
|  | (1.765) | (1.536) | (1.742) |
| IHS(Hispanic Limited English Proficiency) | 2.915 | 2.113 | 3.331 |
|  | (2.040) | (1.820) | (2.024) |
| IHS(Hispanic Harassment) | 0.045 | 0.027 | 0.055 |
|  | (0.273) | (0.211) | (0.299) |
| Observations | 41,502 | 11,252 | 30,250 |

*Notes:* The table presents means (and standard deviations).

# Schools - Summary Statistics - Controls

|  | *All* | *No TV* | *TV* |
|---|---|---|---|
|  | (1) | (2) | (3) |
| Panel A: Schools |  |  |  |
| Log Income | 9.547 | 9.430 | 9.608 |
|  | (0.303) | (0.200) | (0.328) |
| Log Population | 12.484 | 11.559 | 12.964 |
|  | (1.576) | (1.471) | (1.405) |
| Fraction County Hispanic | 0.107 | 0.037 | 0.143 |
|  | (0.160) | (0.079) | (0.179) |
| # School Teachers | 39.591 | 32.684 | 43.169 |
|  | (30.764) | (24.090) | (33.146) |
| # Hispanic Students | 164.343 | 68.500 | 214.011 |
|  | (259.096) | (117.433) | (295.883) |
| # Total Students | 581.524 | 478.166 | 635.086 |
|  | (482.595) | (383.924) | (518.467) |
| Observations | 41,502 | 11,252 | 30,250 |

*Notes:* The table presents means (and standard deviations). No control is significantly different across the coverage contour at the $\alpha = .1$ level.

# Main Findings - Schools
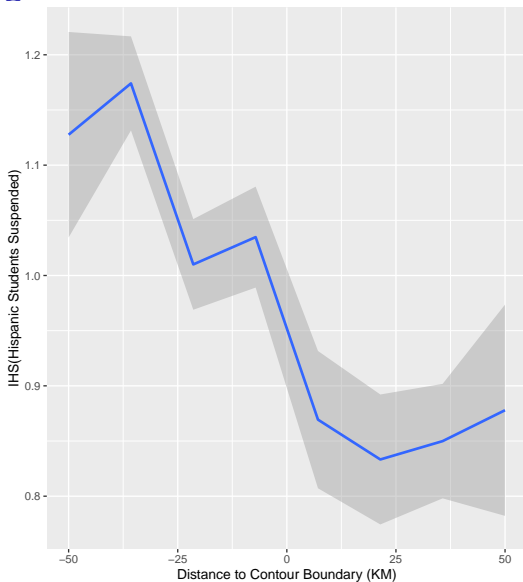


Predicted coefficients and 95% CI from regression

# Effect of SLTV on Hispanic Educational Attainment

| Panel A: IHS(# Hispanic Gifted Students) | (1) | (2) | (3) |
|---|---|---|---|
| TV Dummy | 0.016*** | 0.015** | 0.013** |
| | (0.006) | (0.006) | (0.006) |
| Observations | 26,065 | 26,065 | 26,065 |
| Panel B: IHS(# Hispanic Students Taking AP) | | | |
| TV Dummy | 0.072*** | 0.051*** | 0.047*** |
| | (0.016) | (0.015) | (0.015) |
| Observations | 6,089 | 6,089 | 6,089 |
| Panel C: IHS(# Hispanic Students Passing AP) | | | |
| TV Dummy | 0.034** | 0.042*** | 0.039*** |
| | (0.014) | (0.013) | (0.013) |
| Observations | 2,205 | 2,205 | 2,205 |
| County Controls | Yes | Yes | Yes |
| School Size Controls | No | Yes | Yes |
| School Type Controls | No | No | Yes |

*Notes:*

# Effect of SLTV on Hispanic School Discipline

| Panel A: IHS(Out of School Suspensions) | (1) | (2) | (3) |
|---|---|---|---|
| TV Dummy | $-0.011^{**}$ | $-0.018^{***}$ | $-0.016^{***}$ |
| | (0.005) | (0.005) | (0.005) |
| Observations | 40,864 | 40,864 | 40,864 |
| **Panel B: IHS(Students Chronically Absent)** | | | |
| TV Dummy | $-0.067^{***}$ | $-0.073^{***}$ | $-0.074^{***}$ |
| | (0.006) | (0.006) | (0.006) |
| Observations | 40,869 | 40,869 | 40,869 |
| County Controls | Yes | Yes | Yes |
| School Size Controls | No | Yes | Yes |
| School Type Controls | No | No | Yes |

*Notes:*

# Effect of SLTV on Hispanic School Identity

| Panel A: IHS(Limited English Proficiency) | (1) | (2) | (3) |
|---|---|---|---|
| TV Dummy | 0.040*** | 0.039*** | 0.031*** |
| | (0.007) | (0.007) | (0.007) |
| Observations | 40,864 | 40,864 | 40,864 |
| Panel B: IHS(Victims of Harassment on Basis of Ethnicity) | | | |
| TV Dummy | 0.003** | 0.002* | 0.002* |
| | (0.001) | (0.001) | (0.001) |
| Observations | 40,811 | 40,811 | 40,811 |
| County Controls | Yes | Yes | Yes |
| School Size Controls | No | Yes | Yes |
| School Type Controls | No | No | Yes |

*Notes:*

# Effect sizes

| Outcome | White-Hispanic Gap | TV Regression Coeff. |
|---|---|---|
| Gifted students | 80.0% | 1.3 - 1.6 % |
| AP Students | 39.3% | 4.7 - 7.2 % |
| Pass AP | 22.7% | 3.4 - 4.2 % |
| Suspension | -30.0% | 1.1 - 1.8 % |
| Absent | -12.8% | 6.7 - 7.4 % |

# Schools: Closing Thoughts

- ▶ Robustness ▸ Robustness ▸ Spatial
- ▶ Broadly positive main effects of TV support (Gentzkow & Shapiro 2008) against mainstream findings (Gentile 2004; Zavodny 2006)
- ▶ Contrasting effect of English proficiency and harassment — consistent story of identity being strengthened

# Firms

# Firms

- ▶ Data from Florida's Division of Corporations
    - ▶ Why Florida? 23% Hispanic (8% US total), 11 SLTV stations (11% total) and open data
    - ▶ 146,032 firms successfully geocoded
    - ▶ Aggregate data into $2 \times 2$ KM$^2$ squares
- ▶ Firm Owner Name Classification
    - ▶ 'ethnicolr' — a LSTM model trained with TensorFlow on Florida voter registration data
    - ▶ Validation $> 85\%$ accurate, 23.5% firm owners are Hispanic
- ▶ Firm Name Classification
    - ▶ Keyword matching on (1) references to Latin American countries, (2) top 50 most common Spanish words not in English, and optionally (3) references to common Hispanic foods
    - ▶ 1% (1.1% with food) of firms match this criteria

# Firms - Summary Statistics

|  | *All* | *No TV* | *TV* |
|---|---|---|---|
|  | (1) | (2) | (3) |
| Panel A: Firms | | | |
| IHS(Hispanic Owned Firms) | 0.992 | 0.671 | 1.225 |
|  | (1.694) | (1.308) | (1.892) |
| Hispanic Named Firms | 0.027 | 0.006 | 0.042 |
|  | (0.161) | (0.080) | (0.200) |
| Log Income | 9.498 | 9.463 | 9.523 |
|  | (0.241) | (0.284) | (0.201) |
| Log Population | 11.954 | 11.206 | 12.497 |
|  | (1.398) | (1.253) | (1.239) |
| Fraction County Hispanic | 0.086 | 0.063 | 0.103 |
|  | (0.105) | (0.061) | (0.125) |
| Observations | 23,823 | 10,023 | 13,830 |

*Notes:* The table presents means (and standard deviations). No control is significantly different across the coverage contour at the $\alpha = .1$ level.

# Main Findings - Firms
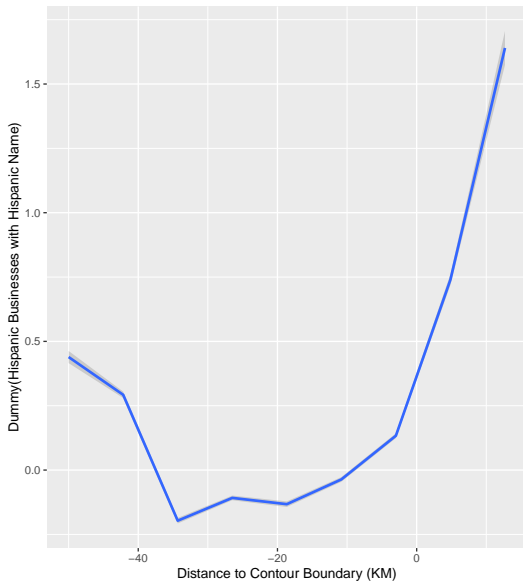


Predicted coefficients and 95% CI from logit regression

# Effect of SLTV on Hispanic Firm Ownership

|  | IHS(# Hispanic Owned Businesses) | | | |
|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| TV Dummy | 0.261*** | 0.122*** | 0.112*** | 0.132*** |
|  | (0.014) | (0.014) | (0.014) | (0.015) |
| TV Dummy $\times$ Distance to Boundary | 0.010*** | 0.007*** | 0.007*** | 0.007*** |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Distance to Boundary (meters) | 0.006*** | 0.009*** | 0.010*** | 0.011*** |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Log(Population) |  | 0.412*** | 0.388*** | 0.342*** |
|  |  | (0.011) | (0.012) | (0.014) |
| County % Hispanic |  |  | 1.261*** | 1.414*** |
|  |  |  | (0.133) | (0.136) |
| Log(Income) |  |  |  | 0.391*** |
|  |  |  |  | (0.070) |
| Observations | 23,853 | 23,853 | 23,853 | 23,853 |

*Notes:*

# Effect of SLTV on Hispanic Firm Names

|  | | *Hispanic Named Business Dummy* | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| TV Dummy | 0.839*** | 0.638*** | 0.637*** | 0.769*** | 0.849*** | 0.775*** |
| | (0.052) | (0.066) | (0.066) | (0.071) | (0.077) | (0.071) |
| TV Dummy × Distance to Boundary | 0.008*** | 0.002 | 0.002 | 0.0002 | −0.0002 | 0.0002 |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Distance to Boundary (meters) | 0.010** | 0.021*** | 0.021*** | 0.031*** | 0.035*** | 0.031*** |
| | (0.004) | (0.004) | (0.005) | (0.005) | (0.005) | (0.005) |
| Log(Population) | | 0.957*** | 0.979*** | 0.702*** | 0.761*** | 0.701*** |
| | | (0.052) | (0.070) | (0.074) | (0.081) | (0.074) |
| County % Hispanic | | | −0.151 | 1.428*** | 1.514*** | 1.434*** |
| | | | (0.312) | (0.367) | (0.388) | (0.368) |
| Log(Income) | | | | 2.350*** | 2.534*** | 2.356*** |
| | | | | (0.319) | (0.344) | (0.320) |
| Observations | 23,853 | 23,853 | 23,853 | 23,853 | 23,853 | 23,853 |
| Only Hispanic Owners | No | No | No | No | Yes | No |
| Only Non-Hispanic Owners | No | No | No | No | No | Yes |

*Notes:* Logit regression

# Firms: Closing Thoughts

- ▶ Robustness ⟨ ▸ Spatial autocorrelation ⟩ ⟨ ▸ Vary boundary cut-off and grid size ⟩
  ⟨ ▸ Vary controls ⟩
- ▶ Substantial effect size compared to white-Hispanic firm ownership gap (68%, log-odds ratio of **0.52**)
- ▶ Existing literature finds entrepreneurship difficult to foster (Karlan & Valdiva 2011; Gin & Mansuri 2014). We find signs of this, but no data on firm size.
- ▶ Business naming demonstrates an appeal to identity (disproportionate increase)
- ▶ Definite demand effect, supply side less clear

# Conclusion

- ► SLTV creates a variety of effects: more firms and better academic performance (omitted: political campaign contributions)
- ► Underlying theme of strengthened identity that reduces inequality
- ► Lots of space for future work

Thank You!

# Effect of SLTV on Hispanic Firm Names - Different Boundary/Grid Sizes

|  | *Hispanic Owned & Named Business Dummy* | | | | |
|  | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| TV Dummy | 0.849*** | 0.927*** | 0.596*** | 0.624*** | 1.144*** |
|  | (0.077) | (0.098) | (0.118) | (0.078) | (0.076) |
| TV Dummy $\times$ Distance to Boundary | −0.0002 | −0.002 | 0.042*** | 0.001 | −0.001 |
|  | (0.002) | (0.004) | (0.010) | (0.002) | (0.002) |
| Distance to Boundary (meters) | 0.035*** | 0.049*** | −0.097*** | 0.026*** | 0.042*** |
|  | (0.005) | (0.012) | (0.035) | (0.005) | (0.006) |
| Observations | 23,853 | 20,404 | 14,386 | 10,598 | 95,373 |
| County Controls | Yes | Yes | Yes | Yes | Yes |
| Distance Cutoff (KM) | 100 | 50 | 25 | 100 | 100 |
| Grid Size (KM$^2$) | 4 | 4 | 4 | 9 | 1 |

*Notes:* Logit regressions

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# Effect of SLTV on Hispanic Educational Attainment - Robustness

|  | *IHS(# Hispanic Students Passing AP)* | | | | | |
|---|---|---|---|---|---|---|
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| TV Dummy | 0.039*** | 0.049*** | 0.044*** | 0.044*** | 0.036*** | 0.032* |
|  | (0.013) | (0.017) | (0.016) | (0.017) | (0.013) | (0.018) |
| TV Dummy $\times$ Distance to Boundary | 0.0003 | 0.0001 | 0.001 | 0.001* | 0.0001 | 0.001 |
|  | (0.0002) | (0.001) | (0.001) | (0.0004) | (0.0004) | (0.001) |
| Distance to Boundary (meters) | 0.001 | 0.012*** | 0.006*** | 0.006*** | 0.003** | 0.001 |
|  | (0.001) | (0.003) | (0.002) | (0.002) | (0.002) | (0.004) |
| Total APs Passed |  |  |  |  | 0.003*** |  |
|  |  |  |  |  | (0.0001) |  |
| Observations | 2,205 | 2,205 | 1,525 | 1,525 | 1,525 | 1,095 |
| County/School Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Distance Cutoff (KM) | 100 | 100 | 50 | 50 | 50 | $33\frac{1}{3}$ |
| Distance$^2$ Interaction | No | Yes | No | No | No | No |
| County F.E. | No | No | No | Yes | No | No |

*Notes:*

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# Effect of SLTV on Hispanic Identity - Spatial Robustness

|  | IHS(# Hispanic Victims of Harassment) | | |
|---|:---:|:---:|:---:|
|  | (1) | (2) | (3) |
| TV Dummy | 0.003** | 0.002*** | 0.003* |
|  | (0.001) | (0.001) | (0.002) |
| TV Dummy $\times$ Distance to Boundary | $-0.0001$** | $-0.0001$*** | $-0.0001$** |
|  | (0.00002) | (0.00001) | (0.00003) |
| Observations | 40,811 | 40,811 | 40,811 |
| Log Likelihood |  | $-4{,}304.916$ | $-4{,}299.820$ |
| $\sigma^2$ |  | 0.072 | 0.072 |
| Akaike Inf. Crit. |  | 8,629.833 | 8,619.640 |
| Wald Test (df = 1) |  | 686.149*** | 686.981*** |
| LR Test (df = 1) |  | 657.312*** | 667.505*** |
| County/School Controls | Yes | Yes | Yes |
| Model | OLS | SAR Lag | SAR Error |

*Notes:*

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# Effect of SLTV on Hispanic Firm Ownership - Spatial Robustness

|  | *IHS(# Hispanic Owned Firms)* | | |
|  | (1) | (2) | (3) |
| --- | --- | --- | --- |
| TV Dummy | 0.122*** | 0.022*** | 0.126*** |
|  | (0.014) | (0.006) | (0.036) |
| Observations | 23,853 | 23,853 | 23,853 |
| Log Likelihood |  | $-38,404$ | $-38,440$ |
| $\sigma^2$ |  | 1.168 | 1.170 |
| Akaike Inf. Crit. |  | 76,821 | 76,894 |
| Wald Test (df = 1) |  | 65,139*** | 63,913*** |
| LR Test (df = 1) |  | 24,759*** | 24,687*** |
| County Controls | Yes | Yes | Yes |
| Model | OLS | SAR Lag | SAR Error |

*Notes:*

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# Effect of SLTV on Hispanic Firm Names - Robustness

|  | *Hispanic Owned & Named Business Dummy* | | | |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| TV Dummy | 0.849*** | 1.071*** | 0.305*** | .8677*** |
|  | (0.077) | (0.115) | (0.078) | (0.079) |
| TV Dummy $\times$ Distance to Boundary | $-0.0002$ | $-0.008$ | $-0.003$ | $-0.001$ |
|  | (0.002) | (0.007) | (0.002) | (0.002) |
| Distance to Boundary (meters) | 0.035*** | 0.123*** | 0.013*** | 0.036*** |
|  | (0.005) | (0.021) | (0.005) | (0.005) |
| Total Businesses |  |  | 0.023*** |  |
|  |  |  | (0.001) |  |
| Observations | 23,853 | 23,853 | 23,853 | 23,853 |
| County Controls | Yes | Yes | Yes | Yes |
| Distance$^2$ | No | Yes | No | No |
| No Food Names | No | No | No | Yes |

*Notes:* Logit regressions

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