Use of ACS Data in Nielsen Demographic Data Products

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Topics

- Nielsen demographic data products
- How businesses use Census/ACS data
- ACS challenges and supplier adaptations
- What if ACS is eliminated?

Nielsen Demographic Data Products

Nielsen Demographic Data

- Nielsen
  - Global company
  - Best known for TV ratings
  - Tracks what people **watch** and what they **buy**

- Also "Claritas" – Now part of Nielsen
  - Major demographic data supplier
  - Products based on US Census and ACS

Nielsen Demographic Data

- Many private sector users
- From large corporations to small businesses
- Industries including
  - Retail
  - Real estate
  - Financial Services
  - Insurance
  - Media
  - Telecommunications
  - Automotive
  - Health care

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Nielsen Demographic Data

- Products include:

- Value-added access to census/ACS
  - Desktop and online systems (software)
  - Geometric data retrieval (circles, polygons)
  - Mapping

- Value-added data products
  - Demographic estimates and projections
  - Estimates of product demand
  - Market segmentation products

- All based on census/ACS data

Nielsen Demographic Data

- Demographic estimates and projections
  - Current Estimates, 5 Year Projections
  - All block groups nationwide
  - Larger areas: tracts, counties, ZIP Codes

- Content
  - Population, households, housing units
  - Age. Sex, race, Hispanic origin
  - Income, home value, household size, year moved into unit, year structure built . . .

  - Items in RED = ACS only

Nielsen Demographic Data

- Other "census" data
  - Before ACS: Long form data adjusted to estimated universe
    - Not really estimates
  - Now: ACS adjusted to estimated universe
    - Legitimate update every year
- Content
  - Education, school enrollment
  - Occupation, industry, employment status
  - Language, marital status, journey to work . . .
- Bottom line . . .
  - Census and ACS are the foundation for Nielsen demographic data products

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How Businesses Use Census/ACS Data

Business Uses of Census/ACS Data

- Guide to <u>site evaluation</u> and <u>marketing</u>
  - Identify size and characteristics of population
  - Locate concentrations of prospective customers
  - Estimate demand for specific products
- Data needed for
  - Small geographic areas
  - Nationwide coverage
  - Recent dates
- ACS meets these requirements
- Data of interest depends on business

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Business Uses of Census/ACS Data

- Retail
  - Product mix tailored to local population
  - Suitable potential labor force available
  - (Language, commuting, education, employment)

- Financial
  - Assess potential for financial products/services
  - (Income, tenure, mortgage status)

- Insurance
  - Estimate risk associated with hurricanes, fires, earthquakes
  - (home value, housing type, vehicles)

- Health care
  - Assess health care needs of local population
  - (Age, income, disability, health insurance coverage)

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Business Uses of Census/ACS Data

- Applications same as with census long form
- But ACS is not a simple "plug in" replacement
    - Numerous complications

- Businesses want a smooth transition to ACS
- Suppliers provide that smooth transition

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ACS Challenges and Adaptations

Challenges and Adaptations

Huge volumes of data – every year

• Multiple releases

• Many thousands of geographic areas

• A lot to update – every year

• Resolution: Programmers doing heavy lifting

Challenges and Adaptations

Moving Base Year for Estimates

- Traditional methods
  - Start with census (fixed date)

- ACS-based methods
  - Start with ACS (a base date that moves!)
  - Estimate fixed distance to estimate year

- Resolution: Modify methods for moving base year

- But . . .

Challenges and Adaptations

<u>What is the ACS base year?</u>

- Some areas have 1Y, 3Y and 5Y data
  - Which to use?
  - Tradeoff between <u>currency</u> and <u>reliability</u>

- What to do in mass production?

- <u>Resolution:</u>
  - Hedge bets between currency and reliability
  - Average ACS based on availability

- But . . .

Challenges and Adaptations

Again . . . What is the base year?

- ACS provides period estimates
  - Clients want point-in-time data
  - Need to designate a single year

- **Resolution:** Use middle year of ACS period
  - Technically not correct
  - But feasible for mass production
  - Backed by research

Challenges and Adaptations

Large Errors and Outliers

- ACS block group data subject to . . .
  - Large margins of error
  - Conspicuous outliers
- Problem: Many ACS estimates based on few responses

- Resolution: Enhanced ACS BG data
  - Augment with data from adjacent BGs

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Challenges and Adaptations

Enhanced ACS Block Group Data

- Maintain 3 distributions for each BG (and each table)

- 1. ACS Published: ACS as published
- 2. ACS Touch: ACS for BG plus adjacent BGs
- 3. ACS Weighted: Weighted average of Published and Touch
    – Greater weight to Touch where ACS had fewer responses

- ACS Weighted serves as base for Nielsen estimates

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Challenges and Adaptations

- How accurate are the enhanced data?
- Compare vs. 2010 census
  - HHs by type and size
  - Mean Index of Dissimilarity
  - All block groups

- Published vs census   = 19.4
- Enhanced vs census   = 12.2

- Making ACS more useful for business applications

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What If ACS is Eliminated?

What If No ACS?

- No impact on estimates of <u>decennial</u> items
  - Population and HH totals
  - Age, sex, race, Hispanic origin

- Major impact on everything else
  - No further updates to <u>ACS-only</u> items

What If No ACS?

- Some data from private sources
  - Items such as income, home value, mortgage status
  - But less authoritative
  - No crosstab by key variables
- Could private suppliers collect such data?
  - Maybe selected items
  - Less authoritative
  - Limited access
  - Enough return on investment?

- Bottom line: Cannot count on private alternatives to ACS

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What If No ACS?

- OK, What <u>would</u> we do?
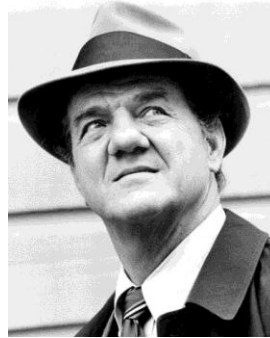
- Suppliers might use ACS data collected so far
  - Base for subsequent years
  - Like going back to long form data
  - Would get us to end of decade

- The real question: What would we do after 2020?

Thank You

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