Viewing Participation in the US Census through the Lens of Lifestyle Segments

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Overview

- Challenges to Census response

- Social marketing

- Application of marketing segmentation (Esri Tapestry™)

- Case Study: 2015 Census Test

- Next steps: Application in 2020 Census Experiment

Cooperation to Censuses is declining

Decennial Census mail return rates (self-response %)

First Census to use paid ad campaign

- 1970: 87%
- 1980: 81%
- 1990: 74%
- 2000: 74%
- 2010: 76%
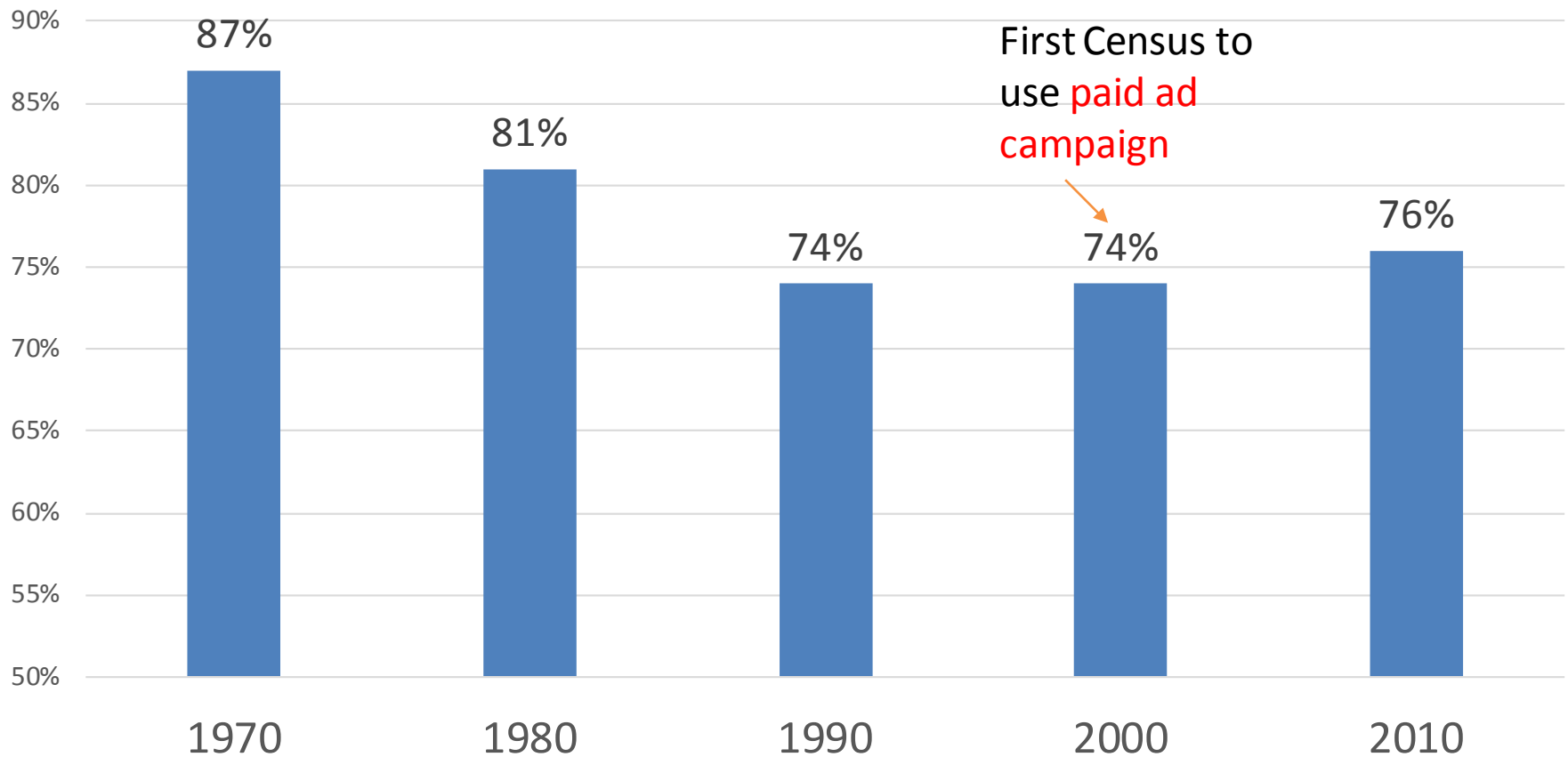
Social Marketing in U.S. Census

- 1950 Census was the 1st to have advertising
  - *Pro bono* by Advertising Council
- 2000 Census used a *paid communications campaigns* for the first time
  - Considered as major contributor in stemming decline in self-response
- 2020 Census planning also incorporates paid communications campaign
  - New self-response mode: Internet added to mail & phone

Case study: 2015 Census Test

- Location: *Savannah, GA* Designated Marketing Area
- Census Day: *April 1, 2015*
- Goals of test
  - *Examine effects of paid social marketing campaign using digital* & traditional tools to encourage Internet or mail self-response
    - Census pre-assigned identifier to address not required for self-response
  - *Focused outreach to Hard-to-Survey populations*
- Self-response by Internet, mail, phone; n=90,000 addresses
  - 4 or 5 contacts: mailed invitation to Internet response,
  - 2 or 3 reminders (email/text or postcards), paper questionnaire

Our Research Questions

- Can Esri Tapestry™ lifestyle segments provide insight into
    - hard-to-survey populations?
    - their response behavior?
    - how we tailor outreach efforts?
- Can Tapestry help design experiments in 2020 Census?
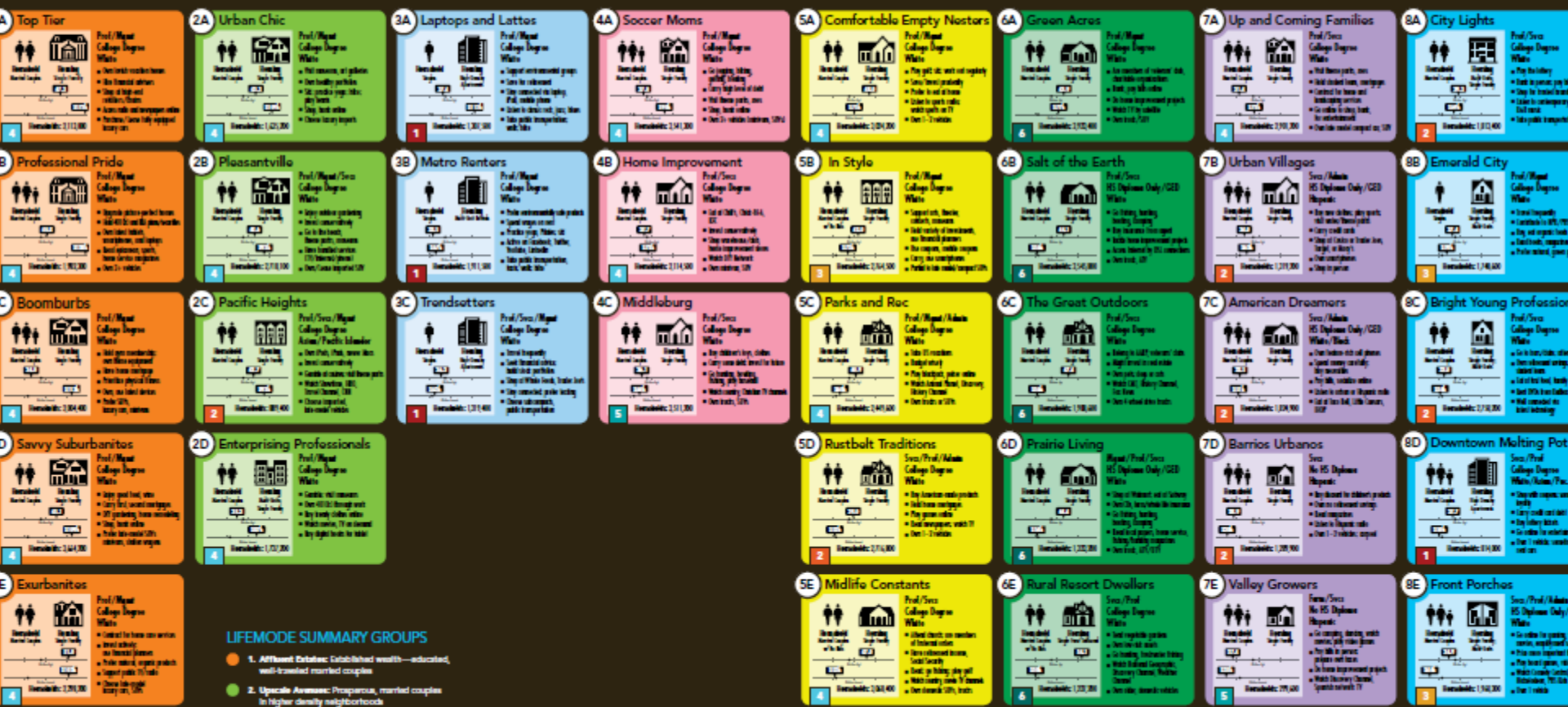
Esri Tapestry™ segmentation
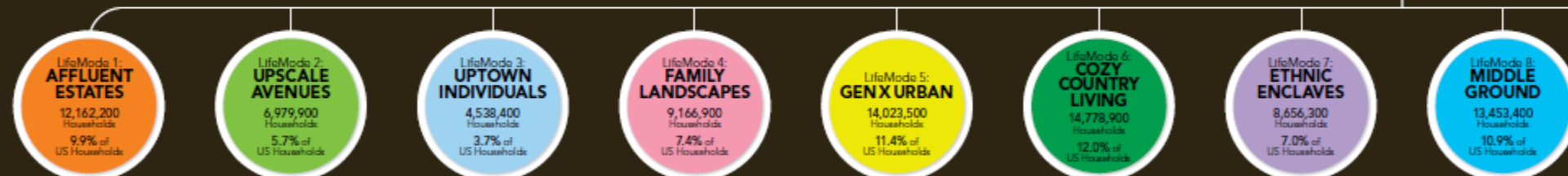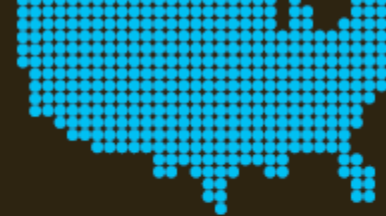
- Third-party segmentation of population by geography & lifestyles
    - Used for consumer marketing (goods & services)
        - Contains consumer purchasing patterns, housing characteristics, socioeconomic characteristics
        - Includes information on attitudes
    - Available at several levels of geography
    - 67 segments aggregate
        - 14 LifeModes
        - 6 Urbanization Modes

ESRI Tapestry™ segmentation

- Constructed by merging multiple data sources, (including some from Census Bureau)
  - American Community Survey data
  - Decennial Census data
  - Consumer marketing survey data
  - Does *not* use Census Bureau response rates
  - *Does* use some variables previously shown to be correlated with Census response, i.e. income, tenure

TAPESTRY SEGMENTATION
The Fabric of America's Neighborhoods

LifeMode 1: **AFFLUENT ESTATES**	LifeMode 2: **UPSCALE AVENUES**	LifeMode 3: **UPTOWN INDIVIDUALS**	LifeMode 4: **FAMILY LANDSCAPES**	LifeMode 5: **GEN X URBAN**	LifeMode 6: **COZY COUNTRY LIVING**	LifeMode 7: **ETHNIC ENCLAVES**	LifeMode 8: **MIDDLE GROUND**
12,162,200 Households	6,979,900 Households	4,538,400 Households	9,166,900 Households	14,023,500 Households	14,778,900 Households	8,656,300 Households	13,453,400 Households
9.9% of US Households	5.7% of US Households	3.7% of US Households	7.4% of US Households	11.4% of US Households	12.0% of US Households	7.0% of US Households	10.9% of US Households

Segments:

- 1A Top Tier
- 1B Professional Pride
- 1C Boomburbs
- 1D Savvy Suburbanites
- 1E Exurbanites

- 2A Urban Chic
- 2B Pleasantville
- 2C Pacific Heights
- 2D Enterprising Professionals

- 3A Laptops and Lattes
- 3B Metro Renters
- 3C Trendsetters

- 4A Soccer Moms
- 4B Home Improvement
- 4C Middleburg

- 5A Comfortable Empty Nesters
- 5B In Style
- 5C Parks and Rec
- 5D Rustbelt Traditions
- 5E Midlife Constants

- 6A Green Acres
- 6B Salt of the Earth
- 6C The Great Outdoors
- 6D Prairie Living
- 6E Rural Resort Dwellers
- 6F Heartland Communities

- 7A Up and Coming Families
- 7B Urban Villages
- 7C American Dreamers
- 7D Barrios Urbanos
- 7E Valley Growers
- 7F Southwestern Families

- 8A City Lights
- 8B Emerald City
- 8C Bright Young Professionals
- 8D Downtown Melting Pot
- 8E Front Porches
- 8F Old and Newcomers

LIFEMODE SUMMARY GROUPS

1. **Affluent Estates:** Established wealth—educated, well-traveled married couples
2. **Upscale Avenues:** Prosperous, married couples in higher density neighborhoods
3. **Uptown Individuals:** Younger, urban singles on the move
4. **Family Landscapes:** Successful younger families in newer housing
5. **GenXurban:** Gen X in middle age; families with fewer kids and a mortgage

URBANIZATION SUMMARY GROUPS

1. **Principal Urban Centers:** Young, mobile, diverse in metros of 2.5 + million people

LifeMode Group: Next Wave
NeWest Residents

Households: 970,800

Average Household Size: 3.35

Median Age: 27.3

Median Household Income: $30,200

LifeMode Group: Scholars and Patriots
College Towns

Households: 1,176,200

Average Household Size: 2.14

Median Age: 24.5

Median Household Income: $32,200

Strategy for our research

- Partition 90,000 Savannah addresses by Tapestry segments

- Merge Test Census self-response results & low response scores (LRS) for segments

- Explore whether segments provide insight
  - Relationship between propensity to self-respond & hard-to-count status
  - Patterns in self-response choices
    - Mode of self-response (mail, Internet, phone)

Low Response Score (LRS)

- *Hard-to-survey metric* created at Census Bureau (Erdman & Bates 2017)

- Uses data from 2010 Census & American Community Survey
  - Population, housing & socioeconomic data

- Estimates *propensity of mail nonresponse* using logistic regression
  - LRS based on estimated mail nonresponse propensity
  - *Higher scores imply less likely* to respond

United States Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

Participation rate

- Measure of self-response that incorporates estimate of number of vacant units

- USPS assigns Undeliverable-As-Addressed (UAA) when mail piece cannot be delivered
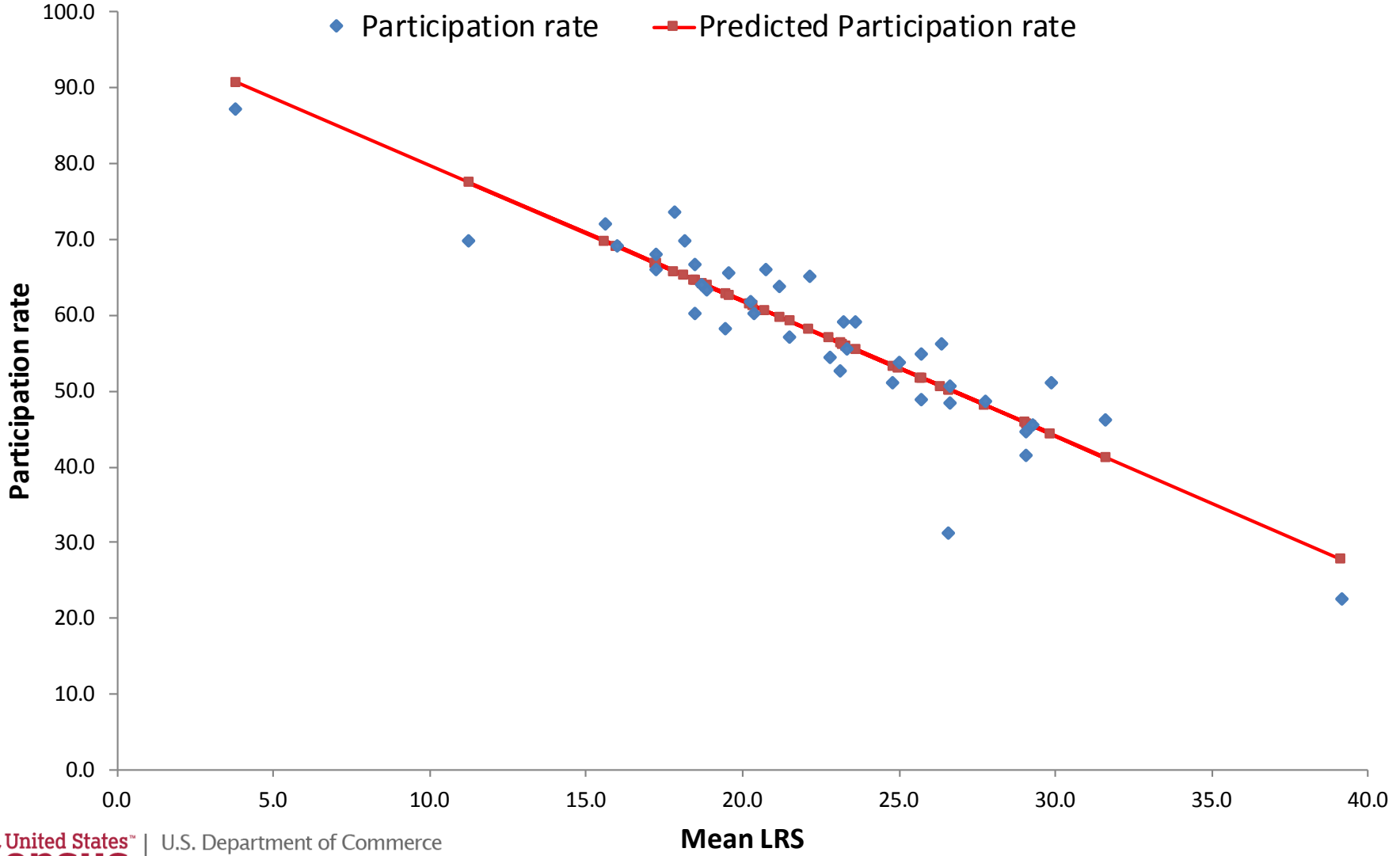
$$Participation\ rate$$

$$= \frac{number\ of\ addresses\ that\ self\ respond}{number\ of\ addresses - number\ of\ UAAs}$$

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Data

- Our _unit of analysis_ is segment
  - 40 of 67 Tapestry segments in Savannah Test site
- ESRI assigns tracts to Tapestry segments
  - All addresses in a tract assigned to the tract's segment
- Census Bureau assigns LRS to tracts
  - All addresses in a tract assigned the LRS of the tract for calculation of mean LRS of segments
- Participation rate calculated using all addresses in segment

United States Census Bureau™

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Participation rate vs. mean LRS
Savannah Census Test partitioned by Tapestry segments

$R^2 = 0.84$

Self-response Mode Distribution by LifeMode

Legend: Web, Mail, Phone

LifeMode	Web	Mail	Phone
Total	69	19	12
Affluent Estates	78	14	8
Ethnic Enclaves	77	16	7
Scholars & Patriots	75	18	7
Family Landscapes	73	17	10
GenXurban	72	17	11
Middle Ground	70	19	11
Senior Styles	70	17	13
Cozy Country Living	69	20	11
Midtown Singles	63	25	12
Rustic Outposts	58	26	16
Hometown	58	25	17
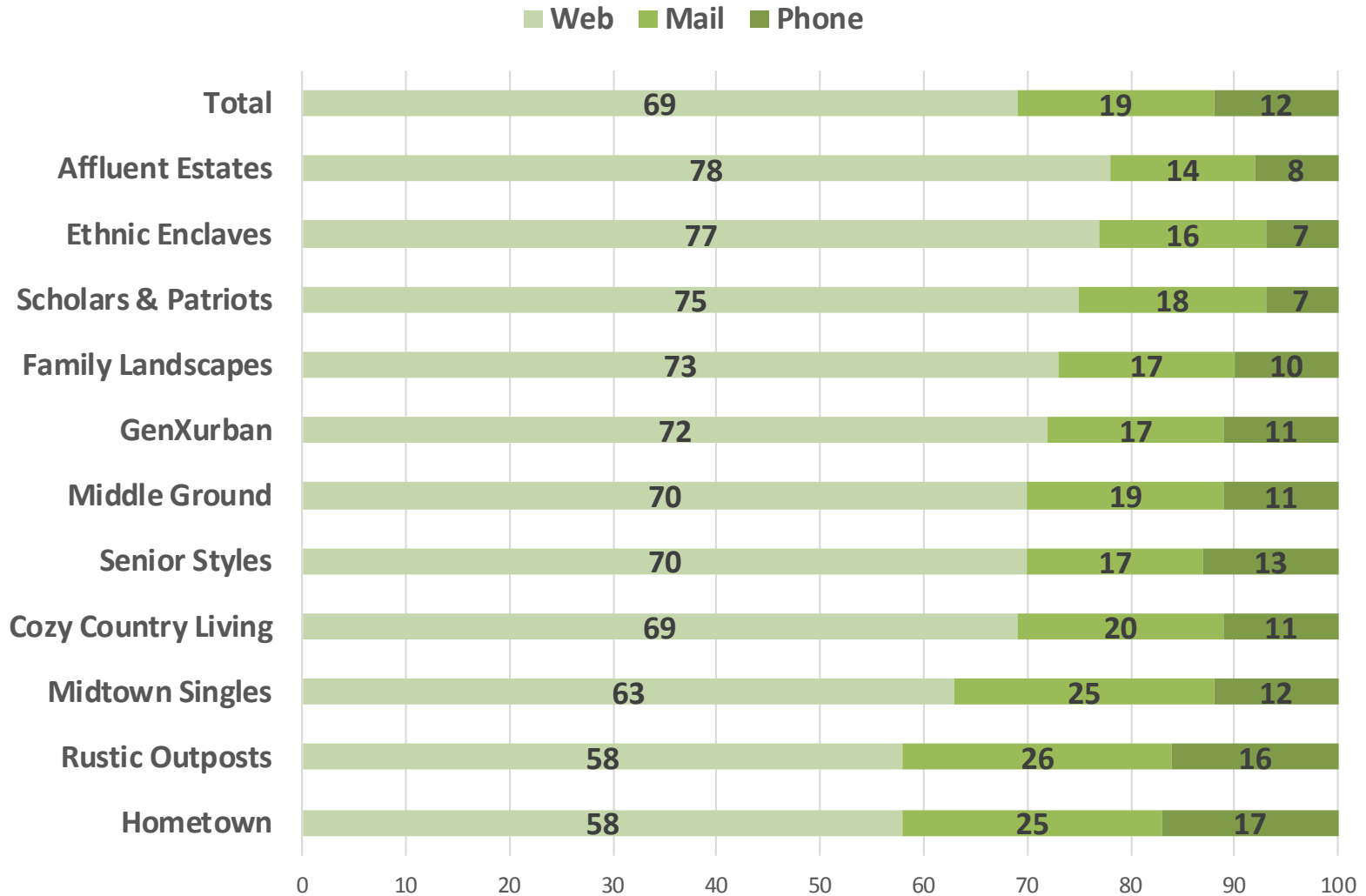
Examples of potential strategies for Census communications in segments

	Tapestry Segment	
	College Towns	*Family Foundations*
Segment Description	·Millennials ·Believe easier to do things online than in-person ·Online 5 hrs/day	·All ages ·Retirees whose children grew up & stayed close to home ·Close-knit community
Segment Influencers	·Celebrity endorsements ·Trends in magazines	·Religion is cornerstone of community
Census Outreach Strategies	·Young celebrities deliver messages · Emphasize internet mode ·Place messages on social media & in magazines	·Local religious leaders & community groups deliver messages

Tapestry™ application in 2020 Census: Experiment

- Program of *experiments to inform the 2030 Census*

- 2030 Census goal: *enumerate population via official government records* (SSA, IRS, SNAP, WIC, DMVs)

- *Some populations are under-covered* by administrative records

- *Customize contact strategies* to these populations so they self-respond

# Tapestry™ application in 2020 Census: Experiment

- Identify *segments that over-index on populations missed* by administrative records

- Use Tapestry insights to *develop tailored contact strategies*

- *Deliver randomized Treatment vs. Control* strategies to selected segments (Census tracts)

  - Control: usual 2020 Census implementation strategy

  - Treatment: Customized contact strategy

- Compare self-response rates between Treatment vs. Control in 2020 Census

NeWest Residents

TAPESTRY™ SEGMENTATION
esri.com/tapestry

ENT DENSITY

llustrates the density and
n of the *NeWest Residents*
egment by households.

High

Low
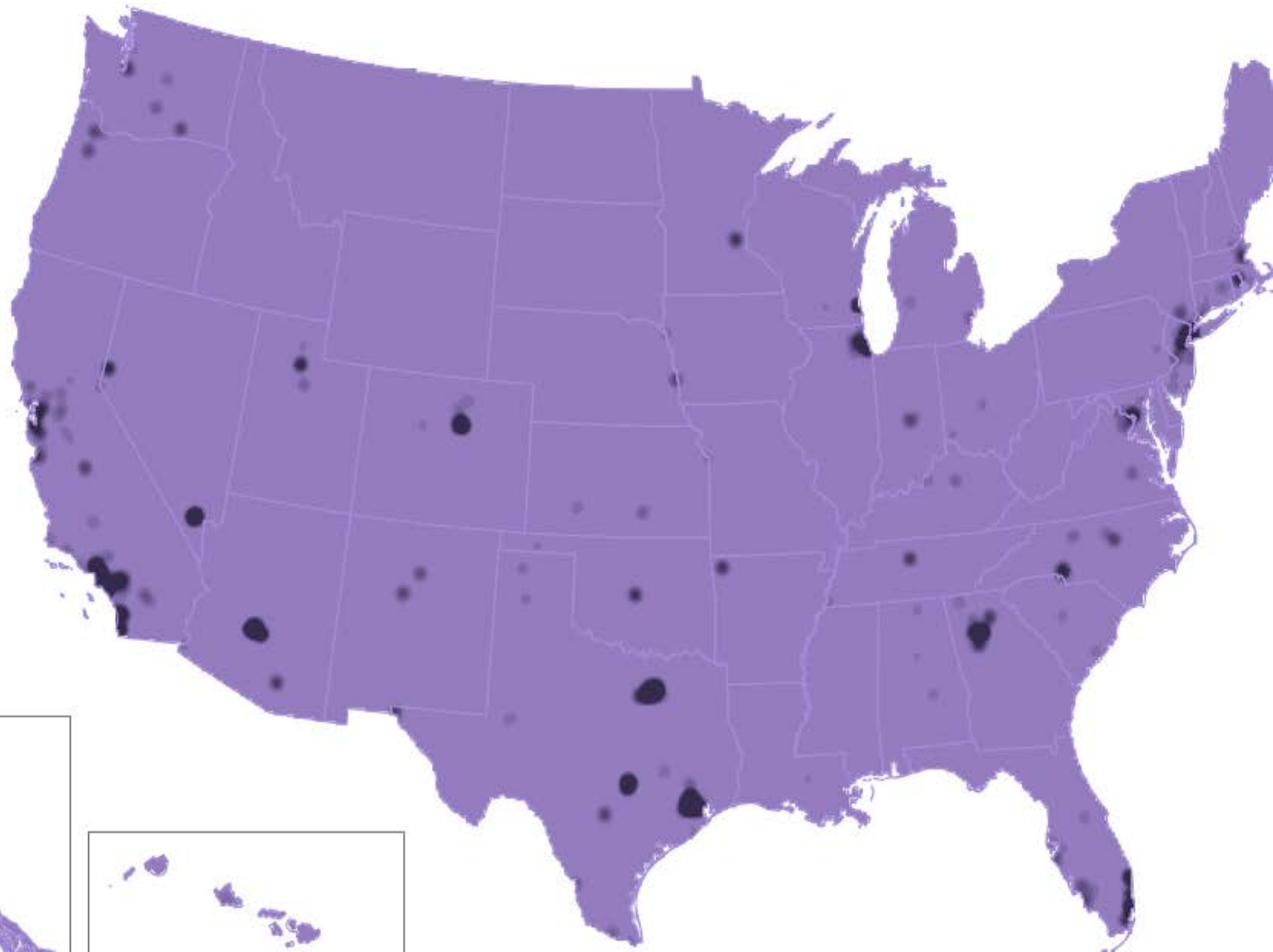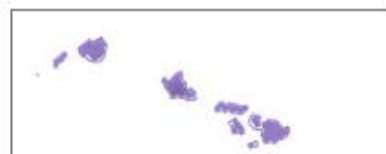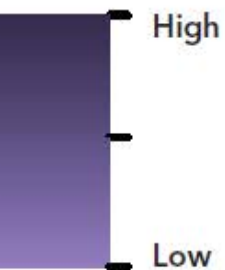
NeWest Residents

WHO ARE WE?

For this young Hispanic market, life has taken many turns recently. They are new to America and new to their careers, with new, young families. Many are new to the English language; nearly one-third of households are linguistically isolated. NeWest Residents are ambitious and dream of a better life. They aren't ready to fully adopt the American way of life but are willing to take risks for the benefit of their families. As the breadwinners, the men of the house work long hours in blue collar jobs, primarily in the service industry. Skilled workers steer toward construction and manufacturing sectors. Female labor force participation is somewhat low, perhaps due to the language barrier, but also because of their parenting responsibilities.

OUR NEIGHBORHOOD

- They're concentrated in larger metropolitan areas (over half a million people) in the South and West.

- Reside in mostly renter-occupied apartments in older, mid- to high-rise buildings. Over 80% of housing units were built before 1990. Rental rates are below the US average (Index 85).

- Half of the households have children, in either married-couple or single-parent families.

- With average household size exceeding three, presence of children less than 5 years old is high compared to the US average. Dependent children represent approximately one-third of the population.

SOCIOECONOMIC TRAITS

- Female labor participation is slightly lower than the US average, partially attributable to the language barrier in this diverse foreign-born market.

- Male labor force participation (Index 116) is compulsory for these new families.

- Working full-time in blue collar jobs, this market works hard and dreams big. They seek adventure and take risks for the betterment of their families.

- They are automotive enthusiasts; if they had the savings, they would buy a used, but bold, fun-to-drive vehicle.

NeWest Residents

MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- This foreign-born market has not quite yet adopted the norms of American life. They don't watch sports on TV, or listen to popular music. They prefer to watch Spanish-language channels on TV. However, fast food dining is a big hit.
- *NeWest Residents* consumers love their caffeine; drinking coffee, sodas, sports, and energy drinks.
- A large portion of their income goes toward baby and children products—disposable diapers, baby food, furniture and equipment, and vitamin supplements.
- They prefer to use cash; debit card ownership is low. Without a credit history, it is difficult for these new immigrants to obtain a credit card.

Possible contact strategies for NeWest Residents

- ✓ In language (*Spanish) mailings* and questionnaires
- ✓ Messages that appeal to *stay-at-home mothers*
- ✓ Customized *graphics of large families* with children
- ✓ Customized website landing pages
- ✓ Monetary (*cash*?) incentives

Summary

- *Did lifestyle segments provide insight into hard-to-survey populations, their response behavior, and outreach strategies?* YES…
  - Tapestry segments captured meaningful variation in mean LRS & in participation rates
  - LRS is good predictor of self-response when Internet, mail & telephone response permitted
  - Esri profiles add value to outreach decisions

- *Can Tapestry help plan for 2030 Census*? TBD…
  - Using Tapestry segments to design a Census 2020 Contact Strategy experiment

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