

A Million Markets of One: New Directions for Household Travel Surveys

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Why are we at a critical juncture?

- Move away from RDD as a sample frame, move toward ABS
- ABS allows for targeted sampling BUT is more dependent on opt-in
- Changing sample frame shifts the focus from non-coverage back to non-response bias
- Incorporation of new technologies heightens concerns about bias

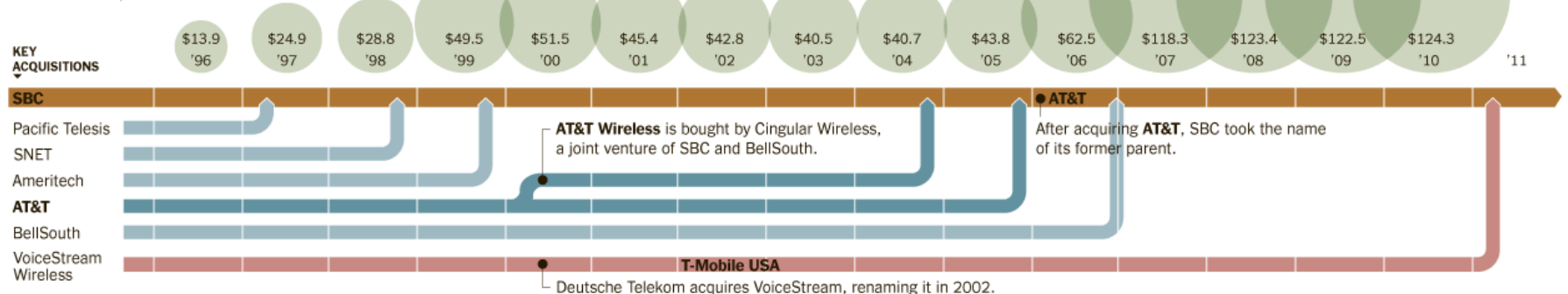
RDD issues as a sample frame:

- Inefficient sample: Working blocks diluted by the break-up of Bell
- Geographic uncertainty: Portability de-couples phone numbers and geography
- Non-ignorable coverage issues: Cell phone only

For AT&T, Back to the Future

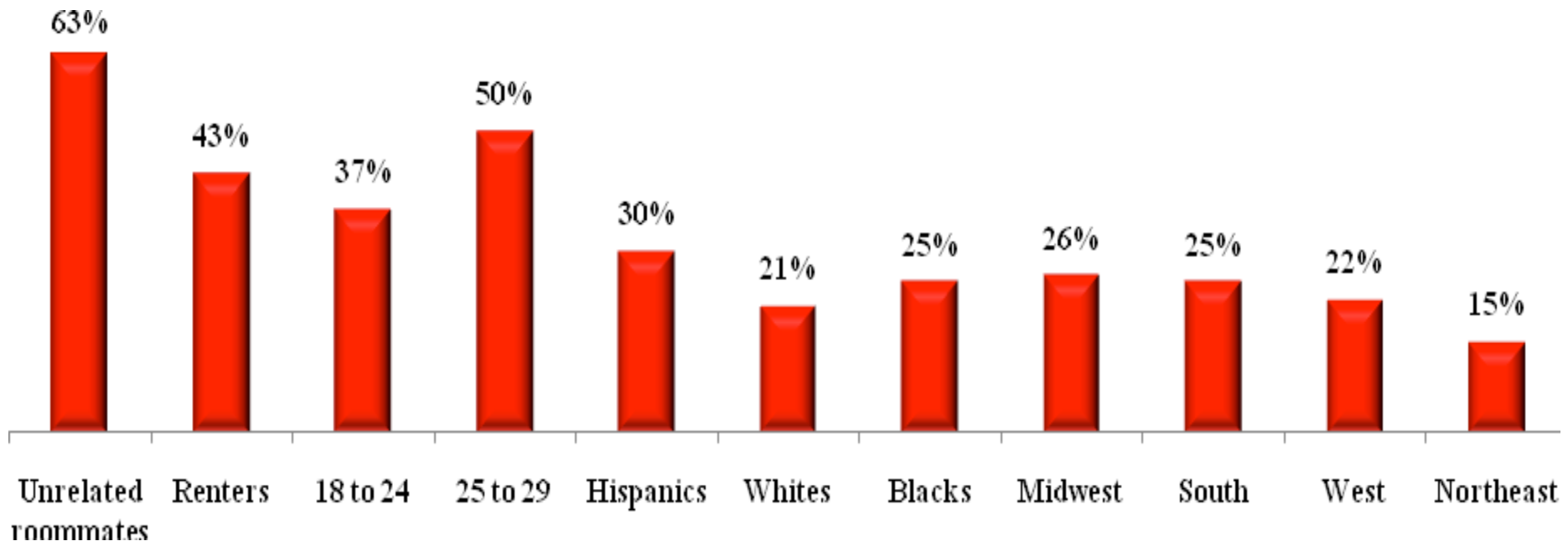
The great Ma Bell was broken up in 1984 as the result of a federal antitrust suit, creating AT&T and seven regional telephone companies. One of the so-called Baby Bells — Southwestern Bell, later renamed SBC Communications — formed a new telecommunications giant by reassembling many of the original pieces through consolidation, eventually taking on the AT&T brand. Now, AT&T, with its bid to buy T-Mobile, is once again inciting worry that competition and consumers will suffer.

ANNUAL REVENUE, BILLIONS ▶



Non-coverage in RDD samples is too high and non-random (non-ignorable)

Percent Cell-Phone Only:



Source: CDC 2010 at:

http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201112_tables.htm#T2

Address-based samples (ABS) are returning in popularity in US:

The United States Postal Service (USPS) Delivery Sequence File (DSF) is available:

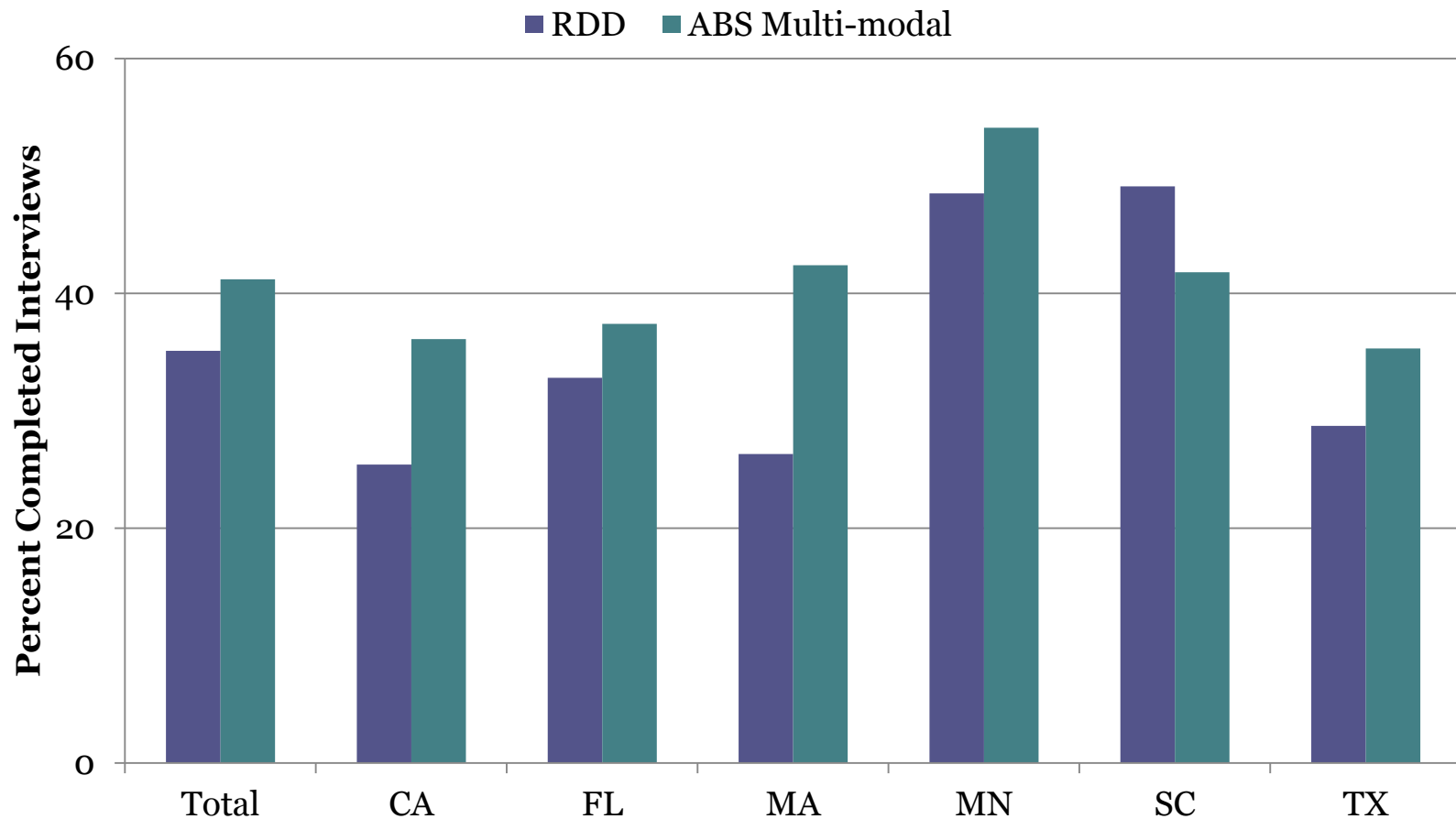
- In combination with geocoded addresses very accurate geography
- Cell-only response proportion is encouraging

Still some challenges, e.g. Issues of coverage, rural routes, and multiple drop boxes must be understood

Benefits of address-based samples to target hard-to-reach groups:

- Multi-mode methods of data collection can increase response rate, coverage
- ABS provides a natural and efficient framework for design and implementation of multi-mode surveys
- Areas with known non-respondents can be targeted for over-sampling:
 - renters, low income, minority and/or immigrant populations, universities, high-income, etc.

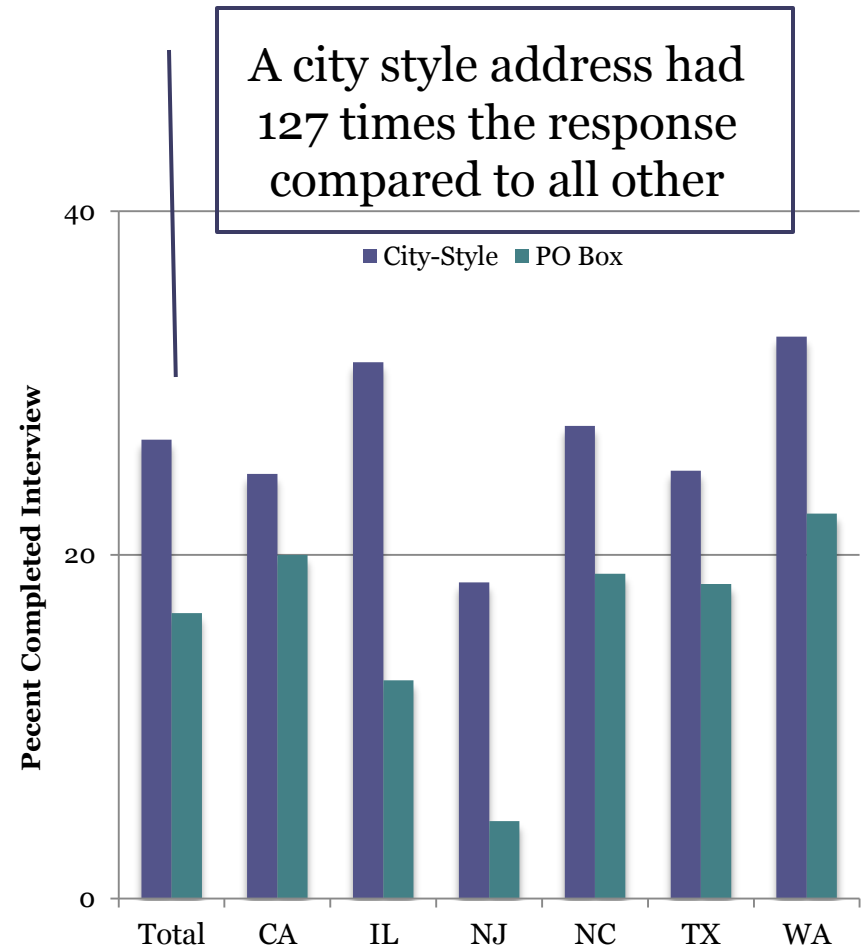
A multi-modal approach with address-based sampling generally increases response rates compared to RDD



Source: "A Comparison Of Address-based Sampling (ABS) Versus Random-digit Dialing (RDD) For General Population Surveys", Link, et al. *Public Opinion Quarterly*, Vol. 72, No. 1 2008, pp. 6-27

ABS challenges at the national level include:

- A lot of variation in telephone match rates by area¹
(e.g. 66 percent in North Carolina to 52 percent in California)
- Address style correlates with response rates (see graph)²
- Compared to RDD samples, ABS significantly over represents non-Hispanic whites and people with higher levels of education²



¹ Jill M. Montaquila, Westat, at: www.dc-aapor.org/documents

² "A Comparison Of Address-based Sampling (ABS) Versus Random-digit Dialing (RDD) For General Population Surveys", Link, et al. *Public Opinion Quarterly*, Vol. 72, No. 1 2008, pp. 6–27

Continuum of response/non-response

(Fixed Response Model)



Respondents:

- Yay!

**Try Harder
(& NRFU):**

- Too busy
- Privacy concerns
- Saliency

**Persistent Non-
Responders:**

- Privacy extremists
- Paranoid of government
- Off the grid

Special Challenge:

Literacy/Language Issues and
understanding cultural differences as immigration increases

Each population has an inherent probability of response:

Stochastic Model

Hispanic

**Low
Income**

*Young
People*

African-
American

New
Immigrants

Renters

Multiple
-Job

Larger
Households

High Income

**Families with
Children**

A new approach/paradigm

How about a volunteer population for mobility measurement?

Sensing devices + prompted recall

- Create and maintain a relationship
- Offer something valuable to participants in return
- Sample like a large panel for representation

A Thousand Markets of One, e.g. Different strokes for different folks:

Survey element:	Young (18-24)	Chinese	African-American	Hispanic
<i>Incentives</i>	Mentioned money/remuneration first thing	Mentioned money	Worried about time commitment, mentioned money afterward	Worried about time commitment but wanted to give opinion/"be heard'
<i>Contact Preference</i>	Letter or text	Through community--important to have introduction from trusted source	Prefer 'personal' nature of phone call	Like formal letter in Spanish
<i>Materials</i>	Lack of connection between diary information and transportation			
<i>GPS</i>	Like/prefer	Did not like	Like/prefer	Did not like
<i>Trust of Government Sponsor</i>	Trusted gov't sponsor	Did not trust—afraid of scam	Did not trust gov't sponsor	Trusted gov't sponsor

We need a new paradigm of respondents:

We can design a better customer experience of the survey protocols, while retaining control of the data quality

Each individual can be accommodated, because we know more about them and their concerns

Break the required data into core elements, and approach each differently for different populations:

Some people are sensitive to income, some to their children's location

Thank You!

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