



## How Much Can it Really Cost?

Presented to the Household Travel  
Surveys Subcommittee

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# Background



Household Travel Survey (HTS) characteristics. . .

- Large-scale, long-duration, multi-stage and multi-method survey efforts
- Numerous design choices available depending on needs, population and funds
- Key scope items include data collection methods, instrument design, survey length, printing, mailing, incentives, and GPS
- Challenges with retrieval rates and response rates

# Background (cont'd)



- “Costs and Trip Rates of Recent Household Travel Surveys,” by David T. Hartgen (2009).
  - Looks at the costs associated with an entire survey effort – taking into account a few high level methodology choices.
  - Factors that were not controlled for by Hartgen include sample design (Random Digit Dial [RDD] vs. Address Based Sampling [ABS]) and data collection methods.
- Next level: how do the following impact the costs of conducting a HTS?
  - Data Collection Methods – phone, web, and mail
  - Multi-Phase design

# Data Collection Methods

## - Common Costs



- Costs common to all data collection methods include:
  - Study design and instrument development
  - Decision to collect activity based information
  - Attrition costs\*
  - Data quality control
  - Data processing
  - Analysis time
- These costs track with survey length.

# Data Collection Methods

## - Phone



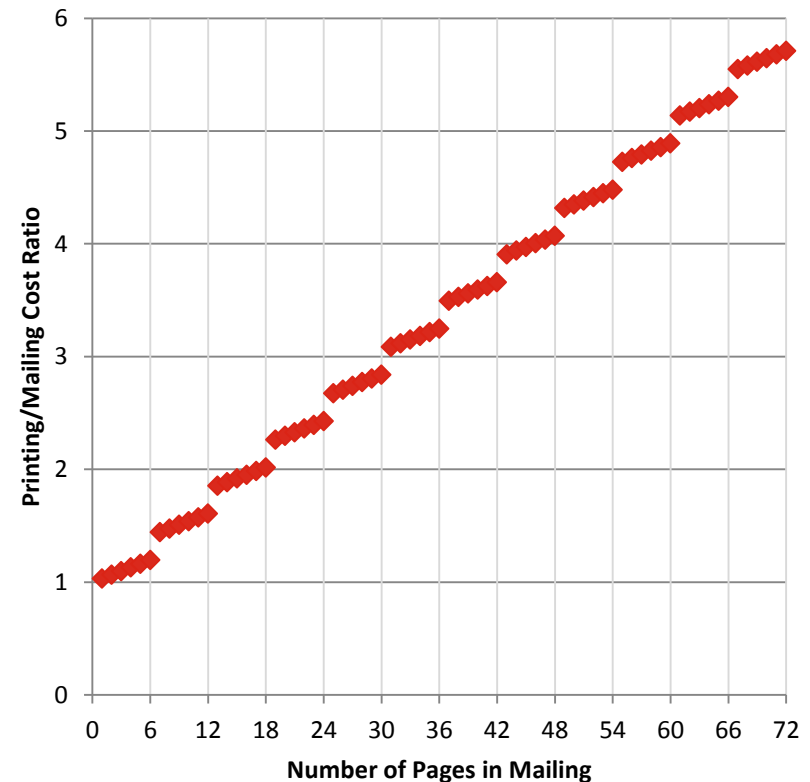
- Phone is particularly cost sensitive to long surveys, and HTS are long.
  - Lower interviewer productivity
  - Respondent fatigue and drop-outs.
- Survey length driven by various factors:
  - Modeling needs
  - Complex questions
  - Screening
- Longer surveys also cost more to program and require more quality assurance time to test.
- Collecting data on cellphones also increases costs.

# Data Collection Methods

## - Mail



- Like phone, mail costs increase with length.
  - Number of pages in the diary
- Drivers include:
  - Complex instructions
  - Number of location modules
- Printing and postage
- Re-contacts much less efficient.



# Data Collection Methods

## - Web



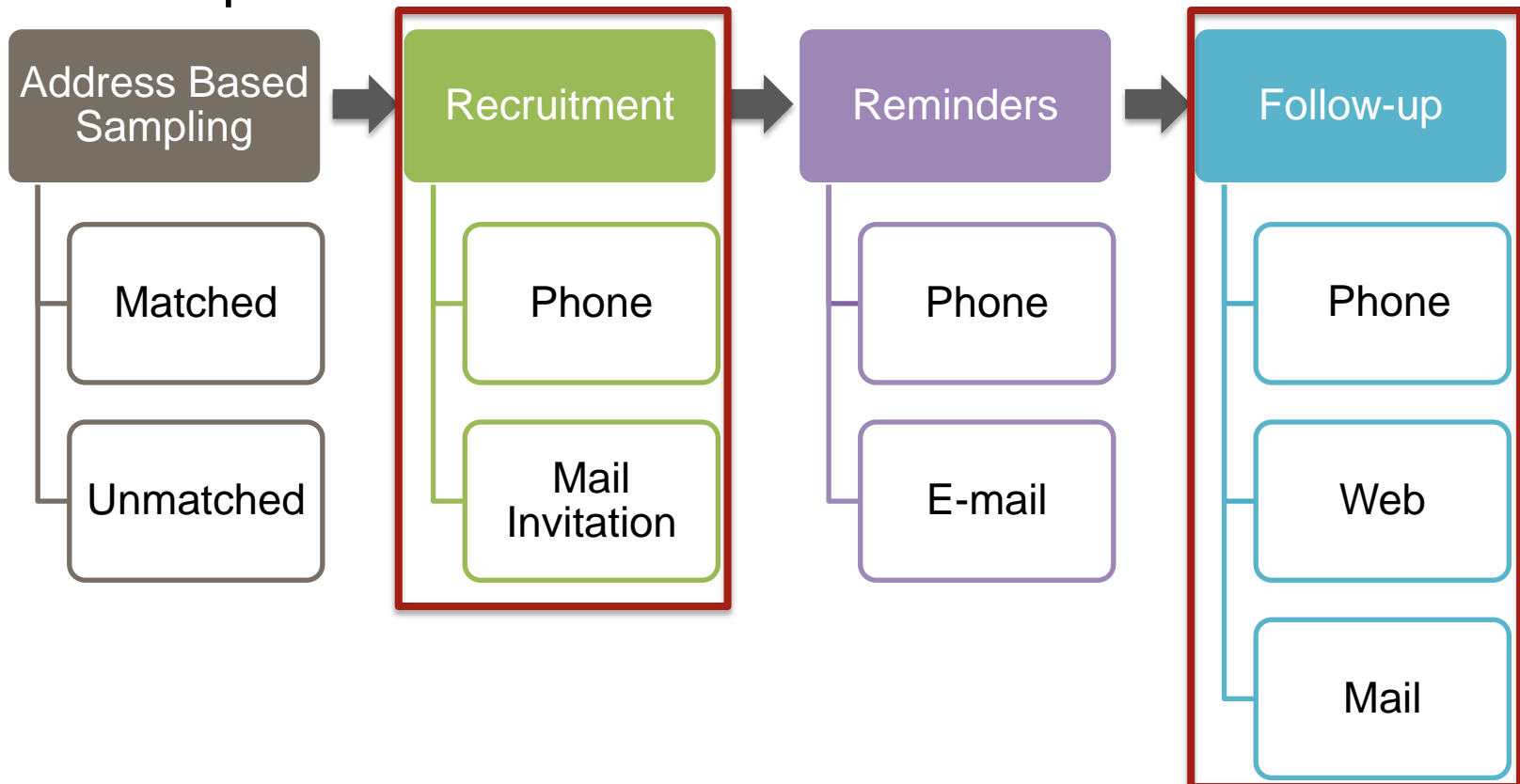
- Programming and quality control costs increase with survey length.
- Like phone, length creates participation issues due to drop-out. (Hoerger 2010)
- Re-contacts to clarify responses are much less efficient; email for re-contact is almost passive.
- Can't be a stand alone for recruitment. Must work in conjunction with mail or phone.



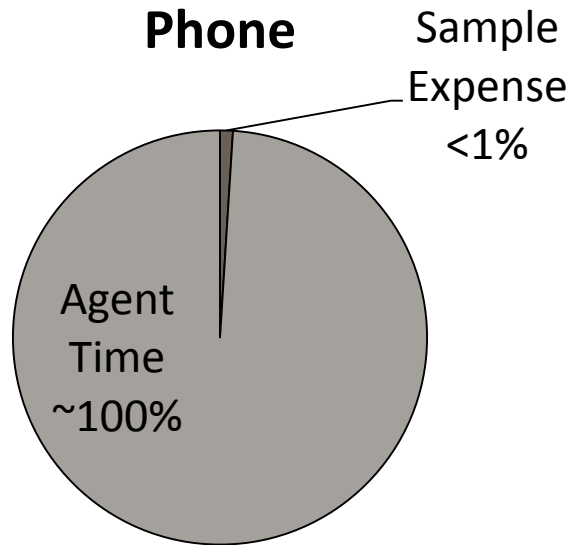
# Survey Phases



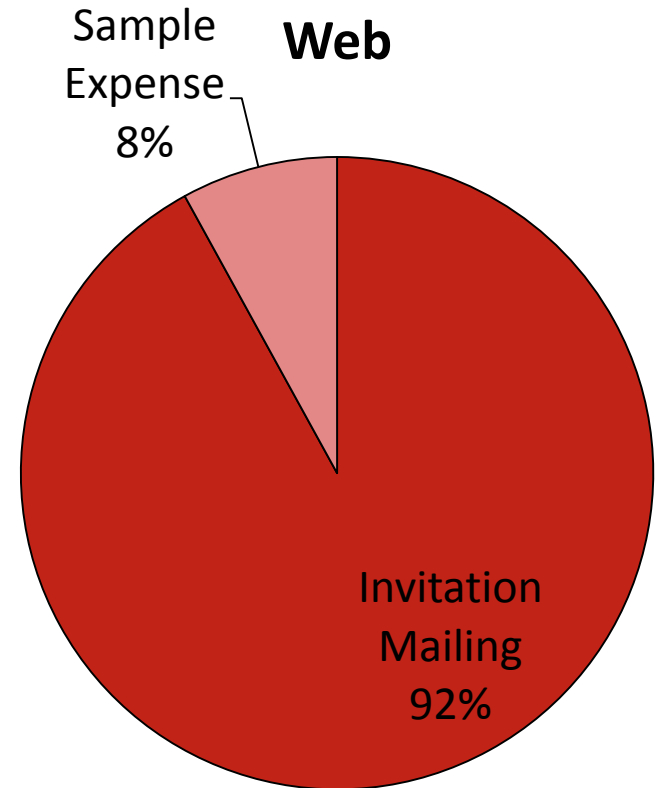
- An in depth look at two phases to determine the components of variable cost.



# Variable Cost of Recruit

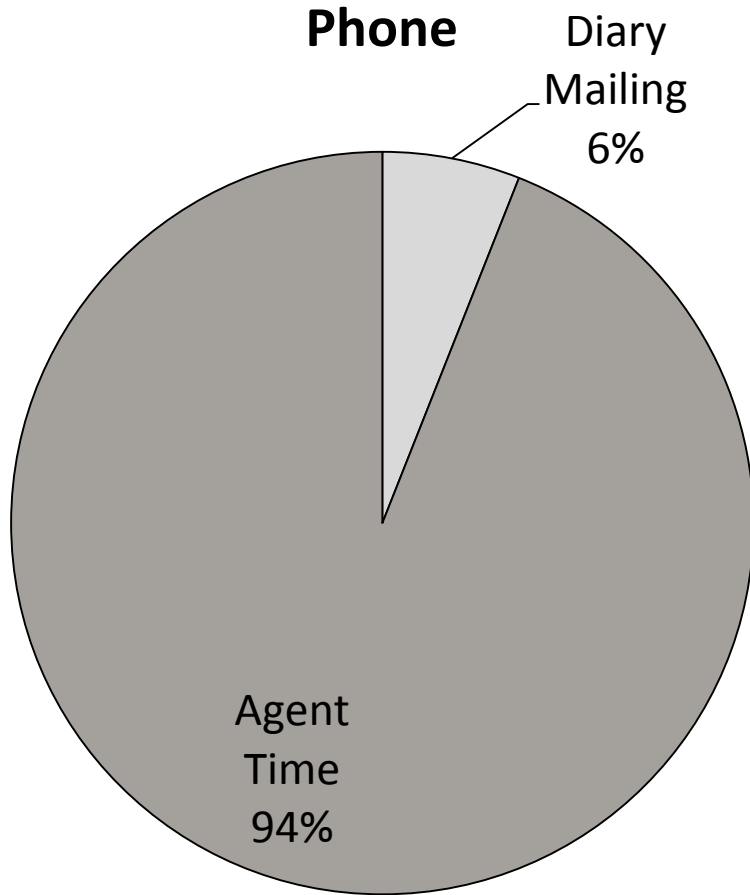


\$0.61

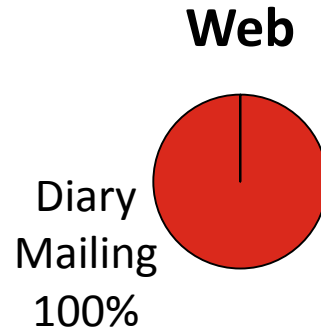


\$1.00

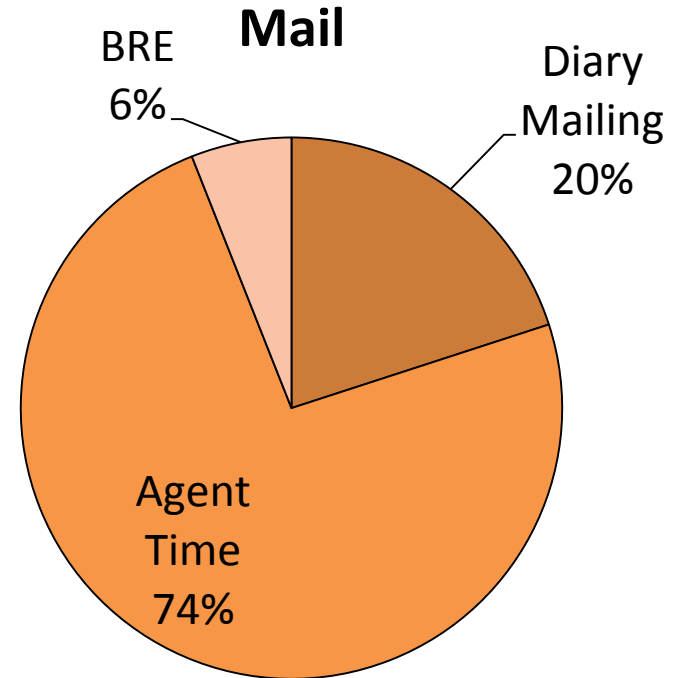
# Variable Costs of Retrieval



\$17.32

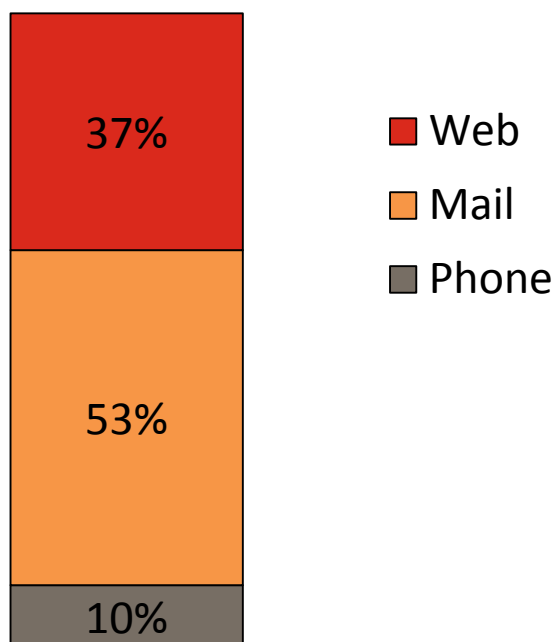


\$1.00



\$4.97

# The Case for Keeping Methods



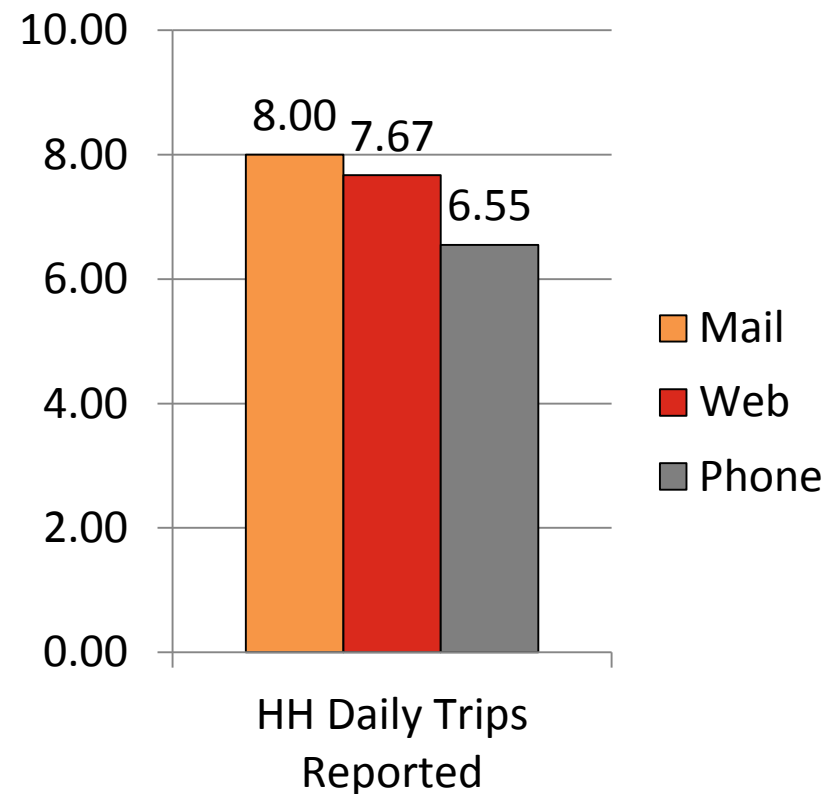
Choice when all data collection methods available

- Literature clearly suggests mail backs are preferred by respondents when multiple methods are offered. (Medway and Fulton, 2012; Morgan and Dillman, 2011)
- HTS respondents show a clear preference for mail.
- Is this a good thing or bad?

# The Case for Keeping Methods (cont'd)



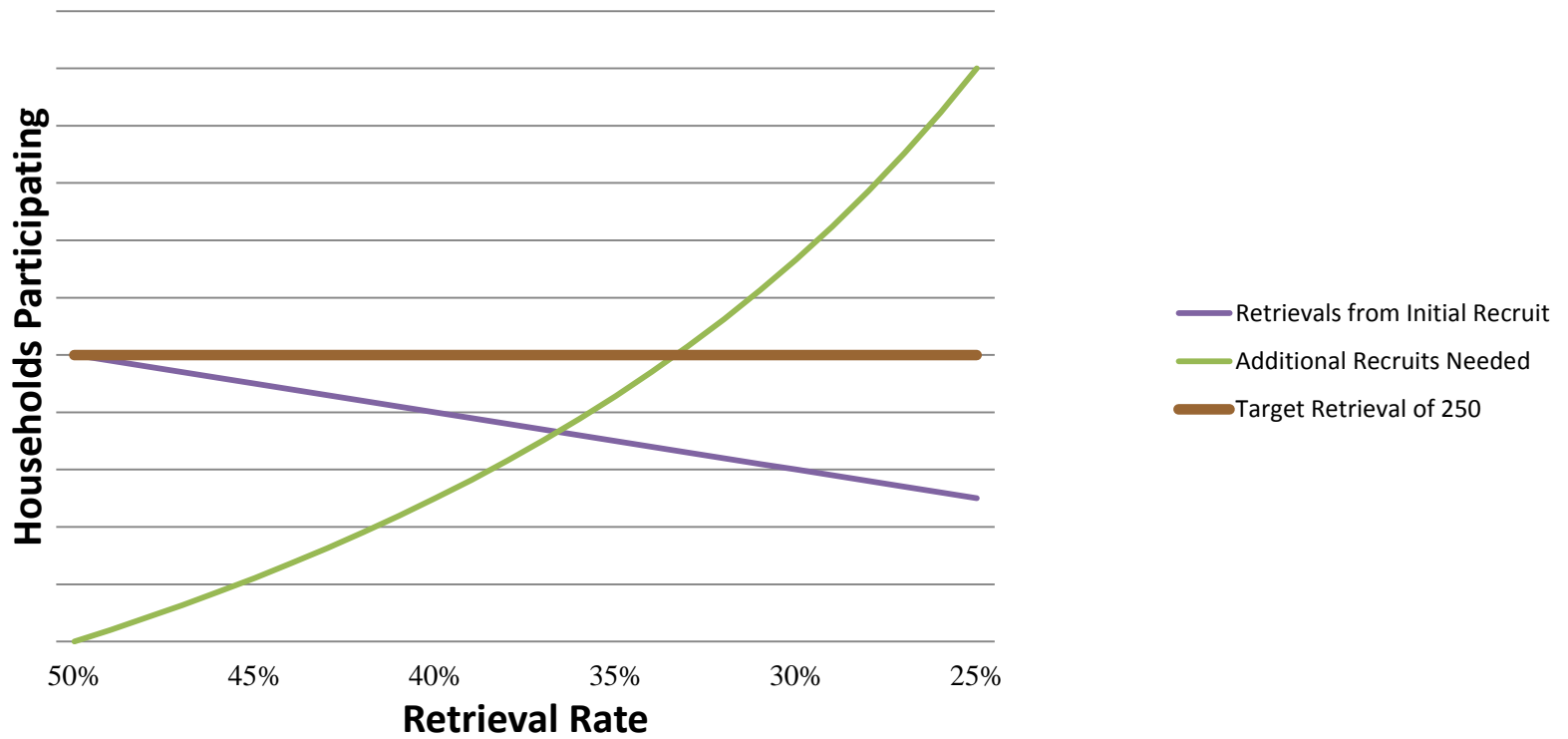
- Good and Bad!
- However expensive, data reporting improves with some methods.
- Controlling for household and person characteristics, average trip rates differ by retrieval method
  - Web respondents report 4% fewer trips than mail respondents.
  - Phone respondents reported 18% fewer trips than mail respondents and 15% fewer trips than web respondents.



# Attrition Costs



- Small drops in the retrieval rate create large cost increases from additional recruiting.



# Incentives



- Incentivize respondents to choose a data collection method that is less expensive as opposed to just participate.
- Amount of incentive can be selected to optimize savings from switching data collection methods.
- Minser et al. (2014 pending) detected increases in participation and data collection method chosen when contingent incentives were offered.

# Citations



- David Hartgen and Elizabeth San Jose. 2009. Costs and Trip Rates of Recent Household Travel Surveys.
- Michael Hoerger. Cyberpsychology, Behavior, and Social Networking. December 2010, 13(6): 697-700. doi:10.1089/cyber.2009.0445.
- Millar, Morgan M and Don A. Dillman. 2011. “Improving Response to Web and Mixed Mode Surveys” Public Opinion Quarterly 75 (2): 249-269.
- Medway, Rebecca and Jenna Fulton. 2012. “When more Gets You Less: A Meta-Analysis of the Effect of Concurrent Web Options on Mail Survey Response Rates”. Public Opinion Quarterly, Vol. 76 (4): 733-746.



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