

Evaluating the Effectiveness of Visual Analog Scales to Measure Expectations

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Outline

- Background
 - RDD telephone surveys
 - ABS web surveys
 - Percentage of Same Responses in Income Expectations
- Experiment Design in ABS web surveys

RDD cell telephone surveys

- Monthly RDD cell phone sample
 - 48 coterminous states and the District of Columbia
 - Rotating panel sample: fresh, reinterviews from 6 and 12 months ago
 - 600 completes: 320 fresh/180/100
 - Response rates for fresh sample averaged at 5%, and at 51%, and 58% for the reinterviews (January 2017-September 2020)
 - Nonresponse follow up is upto 3 calls and 10 calls for fresh and reinterview samples respectively
 - No incentives offered
 - Advance letter and email notes are sent to reinterview samples with postal and/or email addresses provided
 - A typical survey period is 25-27 days (3 times a year it is 33-34 days)
 - Prescreening based on activity flags purchased from sample vendor

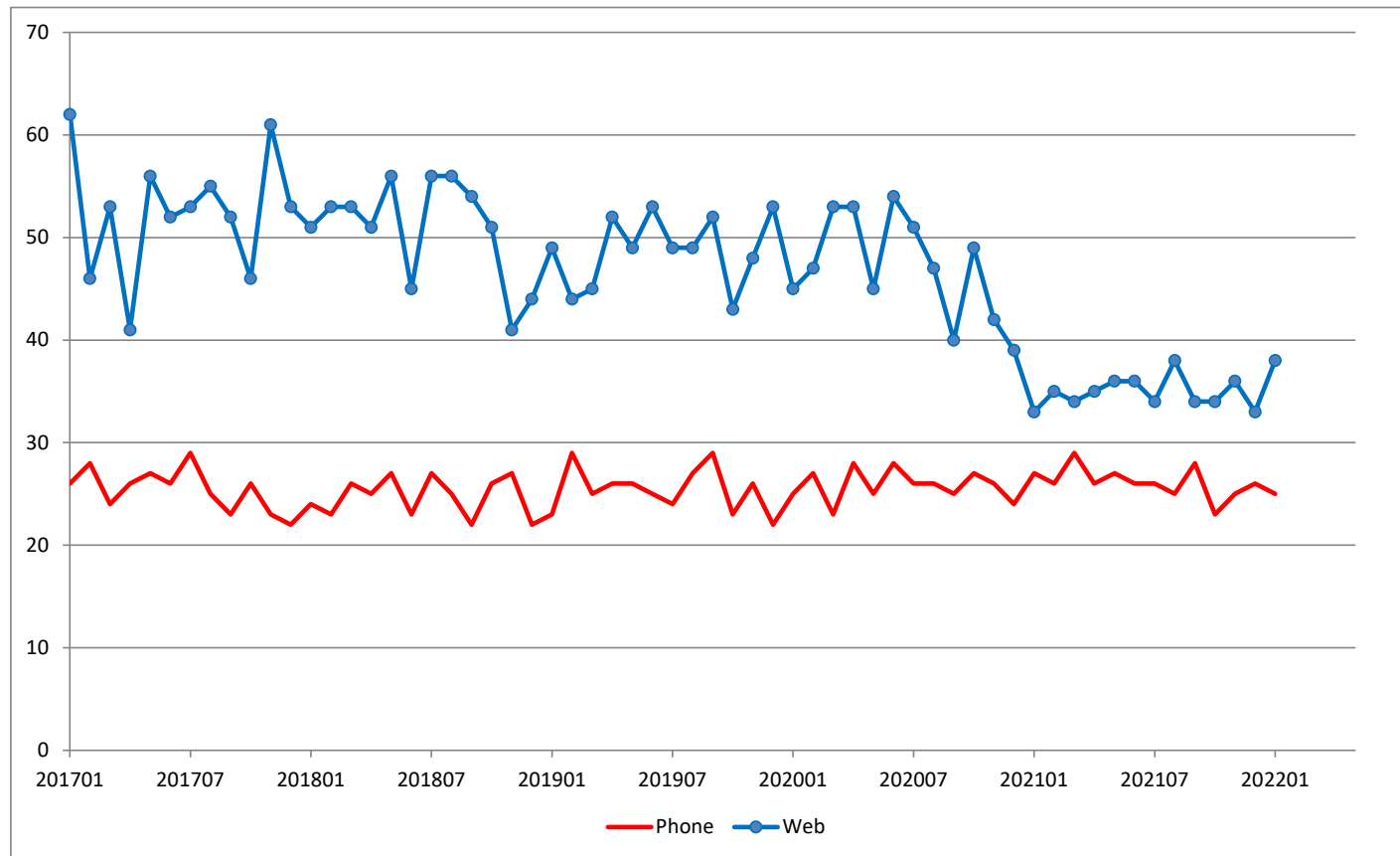
ABS web surveys

- Residential or residential with some business addresses in the 48 coterminous States and the District of Columbia and excludes PO boxes, seasonal and vacant location addresses
- Within household selection instructions ask an adult householder whose name is on the mortgage, or lease to complete the survey
- Rotating panel design
- The web-only survey invitations mailed on weekly samples on three days of the week to spread the responses. The invitations include a web link, login id and a QR code to access web link
- The mailing protocol includes one invitation letter and a reminder letter scheduled to be 14 days apart
- No incentives are given
- The recontact sample who provided their email addresses in the first interview are also followed up by email invitation and upto 2 reminder messages
- Respondents can choose to type in website address and login id, or use QR code to go to website address and type in login id from the invitation letter, or if available use survey link from the email and type in their login id
- The average response rates are 5% and 23% respectively for fresh and recontact samples (April 2021-present). The average time to complete the online questionnaire is 21 minutes

RDD telephone surveys vs. ABS web surveys – Sample differences

- A higher percentage of male respondents, 18-34 age group, highschool or less education group and a smaller percentage of homeowners and stockowners in the telephone survey sample
- Compared to general population, both samples have a higher percentage of respondents from higher income and education groups
- Both samples are adjusted for respondent's sex, age, household income, region of residence and homeownership distributions

Weighted Percentage of Same Responses in Income Expectations



	Phone	Web
Average	26	47
Min	22	33
Max	29	62

Previous Research on Visual Analog Scale

- Higher rates of noncompletion, missing data and no differences in response distributions (Couper et al., 2006)
- Starting point could affect missingness and measurement (Buskirk et al., 2015)

Experiment Design – Control Condition

Surveys of Consumers

umstudy.isr.umich.edu/sca/?Fields=xtimegate:1,showQ1aSignal:1,webmail:1&AssignMode=Always&Language=ENG

surveys of consumers
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More Information:
866-989-0051
English

During the next 12 months, do you expect your total (family) income to be higher or lower than during the past year?

Income will be higher than during the past year
 Income will be about the same
 Income will be lower than during the past year

By about what percent do you expect your total (family) income to increase during the next 12 months?
(Please report a number from 0.1 or higher)

. % increase in total income in the next 12 months

Next ▶

◀ Back

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◀ ▶

More Information: 866-989-0051 English

Experiment Design – Experimental Condition

Small screen

Surveys of Consumers

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Incognito (2)

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By about what percent do you expect your total (family) income to change during the next 12 months?

Select your response by clicking one of the numbers or moving the slider.

0.0 -100.0 0.0 100.0

More Information: 866-989-0051 English

Large screen

Surveys of Consumers

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Incognito (2)

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0.0 -100.0 0.0 100.0

Next

Back

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Research Questions (I)

- RQ1: Will there be a decrease in response rate?
 - Experienced technical difficulties could decrease response rate
 - Could a dedicated group of respondents that would simply ignore the technical difficulties
- RQ2: Will respondents change between devices?
 - Fresh Sample: 48.29% of respondents use smartphone to complete survey
 - Reinterview Sample: 38.01%
- RQ3: Will the socio-economic characteristics differ by experiment conditions?
 - In the US, the digital divide by income, urbanicity, age and race-ethnicity exists, therefore there could be response rate differences by experiment conditions.

Research Questions (II)

- RQ4: Will the missingness vary by experiment condition?
 - Four missingness criteria defined
 - Index questions
 - Stem questions
 - Socio-demo questions used for weighting
 - Other socio-demo questions
- RQ5: Will the response distribution vary by experiment condition?
 - Definition of “same”: need to be constructed from the numerical scale

Limitations

- There is no variation in experimental condition by
 - Starting point
 - Capability of typing a number in the answer box

Thank you!

- Contact: tsuzer@umich.edu

References

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- Couper, M. P., Tourangeau, R., Conrad, F. G., & Singer, E. (2006). Evaluating the effectiveness of visual analog scales: A web experiment. *Social Science Computer Review*, 24(2), 227–245. <https://doi.org/10.1177/0894439305281503>