

# Methodological Challenges in Multi-mode and Online Surveys: Some Global Case Studies

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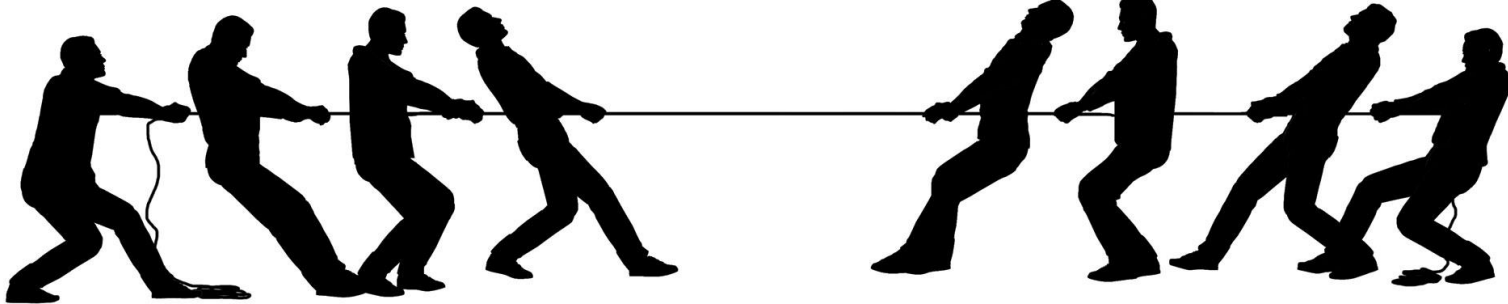
# Today's Agenda

- Methodological challenges with online surveys
  - Mode and sample bias
  - Cognitive engagement & satisficing
- Three Case Studies
  - Mode effects in United States
  - Face to Face vs. Online Surveys of Internet Users in Turkey
  - Cognitive engagement with online commercial panels

# Growth of Internet Surveys

Quality / Validity

Cost (time, money)



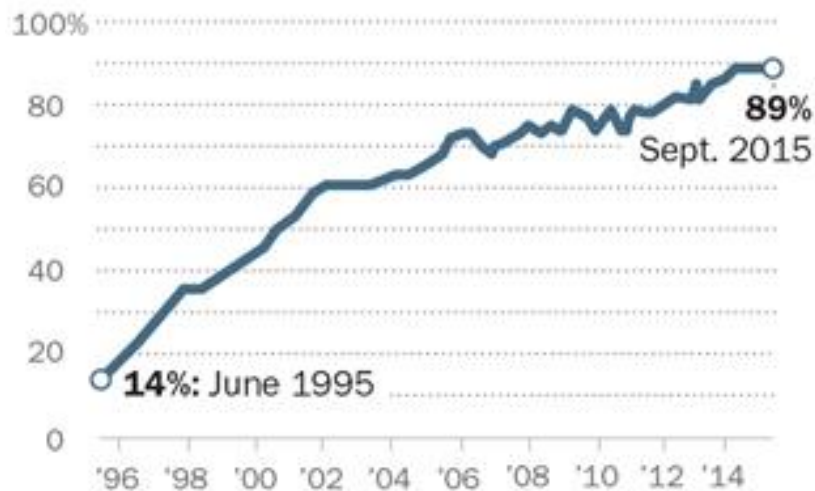
# Bias from mode effects?

- Internet surveys have lower social desirability
- BUT - compared to face-to-face or phone:
  - Non-probability samples / self-selection bias
  - Hyperactivity /panel conditioning
  - Cognitive engagement and attention

# In the USA

## Dramatic Rise in Internet Use, But One-in-Ten Still Offline

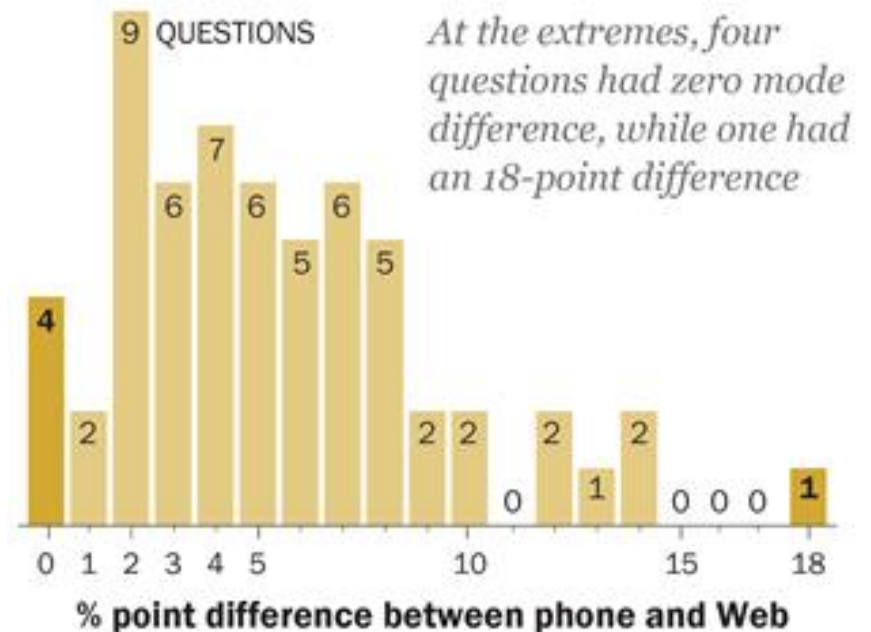
*% of U.S. adults who use the internet from any location*



Sources: 1995-2014 Pew Internet, Science and Technology Surveys; Jan-Mar 2014 Political Polarization and Typology Survey; and Aug-Sept 2015 Governance Survey Phase A

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## Summary of Mode Differences



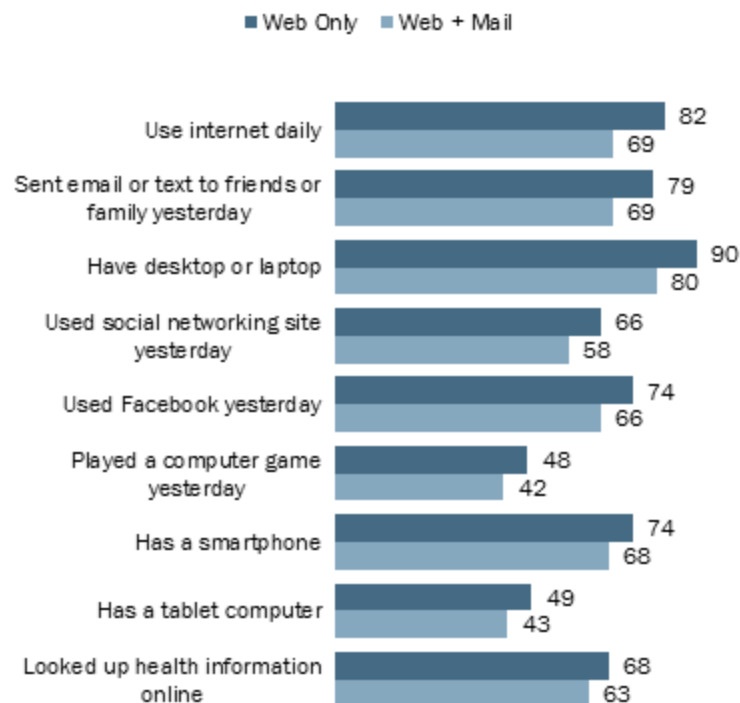
Source: American Trends Panel Wave 5. Survey conducted Jul. 7-Aug. 4, 2014.

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# Differences in Communication Behaviors

## Technology and Internet Items Show Sizeable Differences

Comparisons of Web-only and total sample, in %



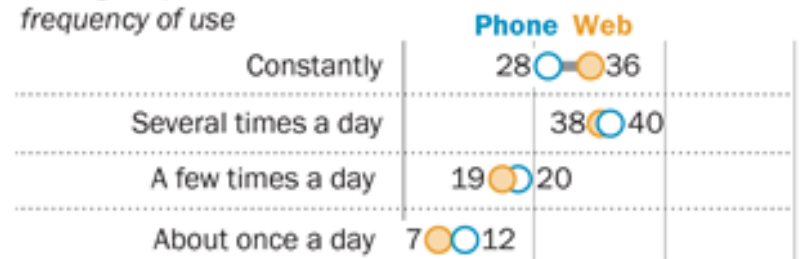
Source: American Trends Panel Waves 5, 8 and 9.

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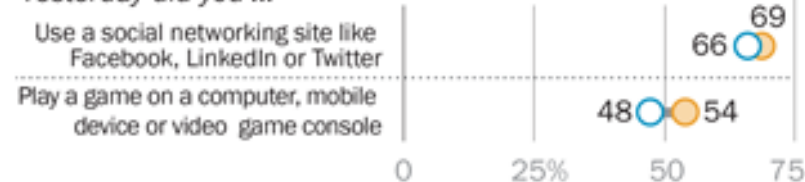
## Some Technology Use Measures Sensitive to Mode of Interview

% giving answer in each survey mode

Among daily internet users, frequency of use



Yesterday did you ...



Source: American Trends Panel Wave 5. Survey conducted Jul. 7-Aug. 4, 2014.

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# Case Study #1

- Comparing Internet, Telephone, Mail Data Collection Modes
- Environmental Policy & Risk Survey
- Geographic-Based Sampling Frame: 45 census tracts within state of Ohio

# Methodology

- Household address-based sample – addresses with and without telephone
- Multi-stage Data Collection Approach
  - Invite Letter with survey URL followed by postcard
  - After 4 weeks either CATI or Self-administered paper survey mailed
  - Respondents that refused to complete via CATI but were willing to complete a web survey were given URL
  - Respondents that refused to complete via CATI survey but were willing to complete self-administered paper survey were mailed a survey packet and business reply envelope.

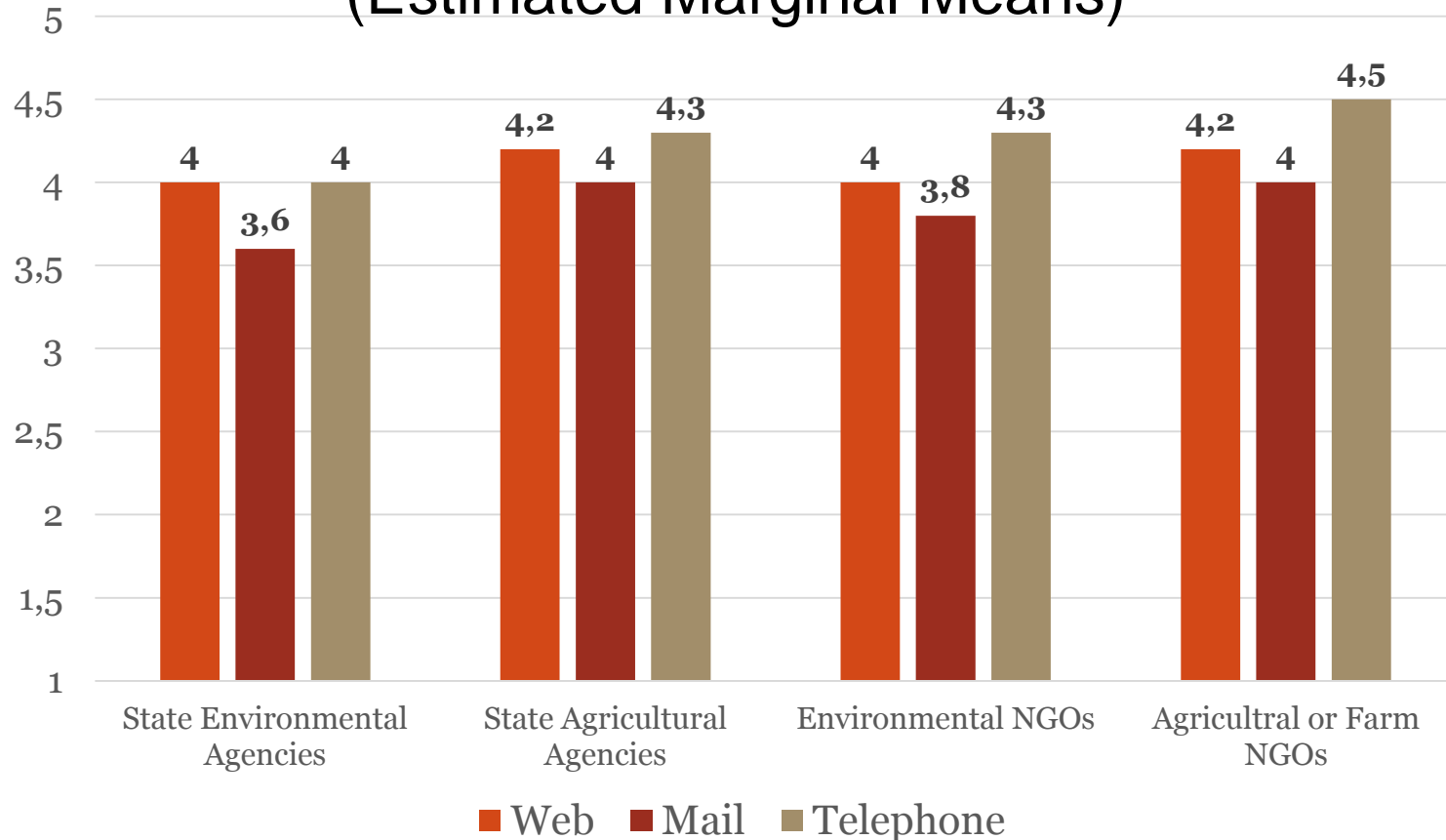


# Demographics By Mode

Demographic	Internet (N=403)	Mail (N=414)	Landline Telephone (N=451)
Male	71%	61%	42%
College Graduate	50%	40%	32%
Race (% White)	96%	95%	90%
Age Category			
18-34 yrs	16%	12%	6%
35-54 yrs	33%	30%	23%
55+ yrs	16%	58%	71%
Under \$50,000 Median Household Income	34%	47%	59%
Mean Left/Right Ideology (1=Liberal/9=Conservative)	5.9	5.8	5.6

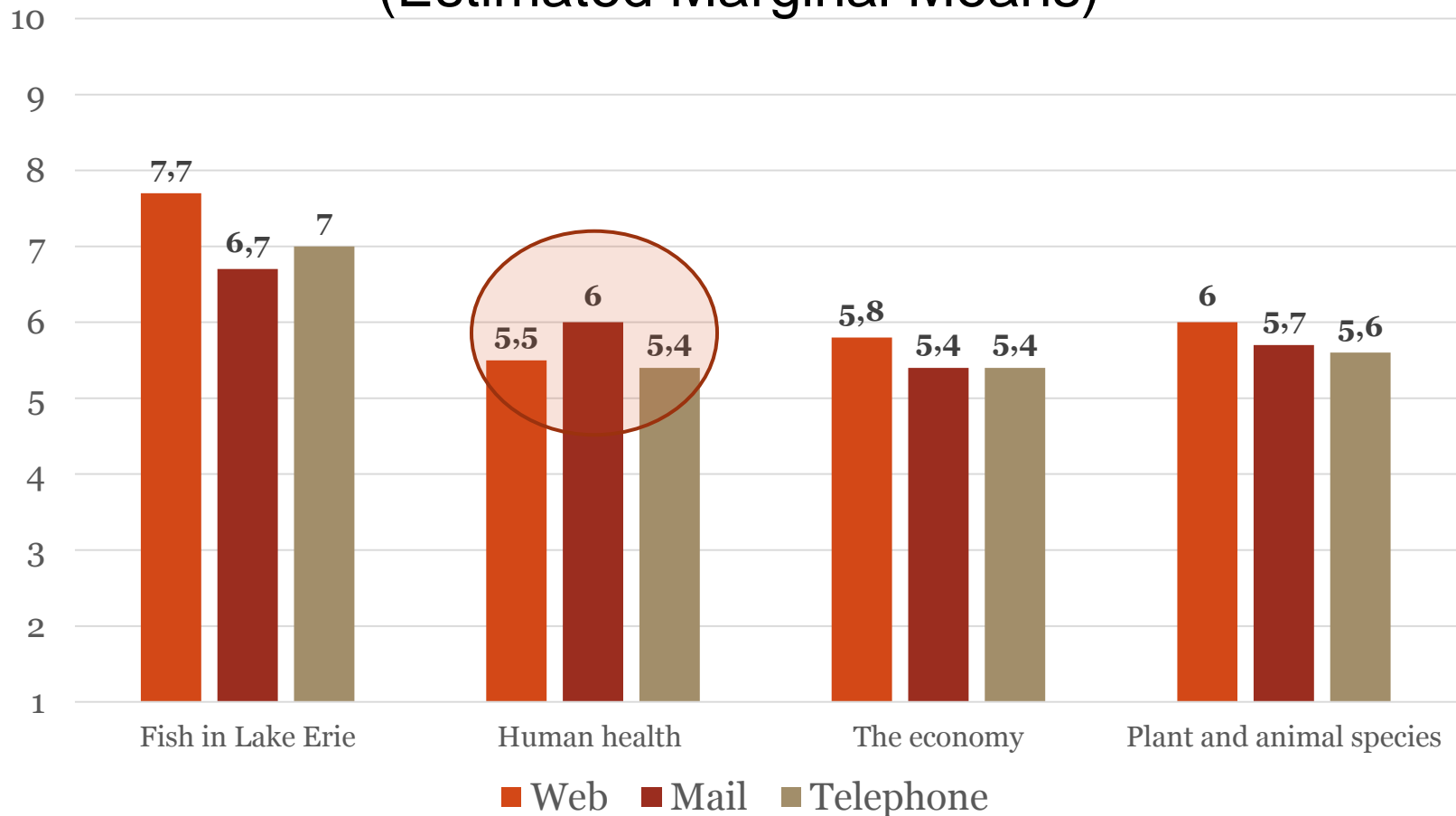
# Mode Effects Controlling for Demographics?

Institutional Trust X Mode  
(Estimated Marginal Means)



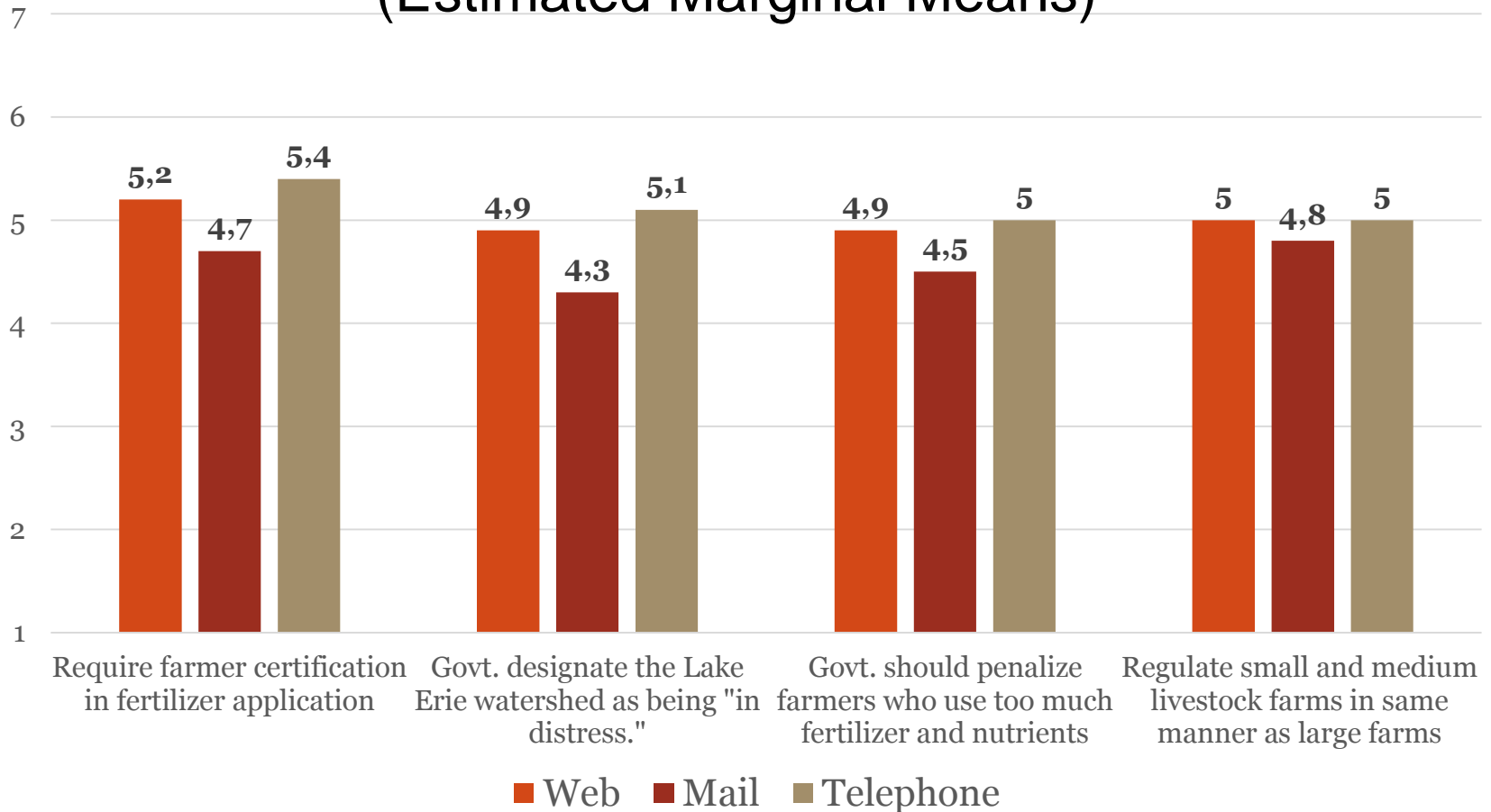
# Mode Effects Controlling for Demographics?

Risk Perceptions X Mode  
(Estimated Marginal Means)



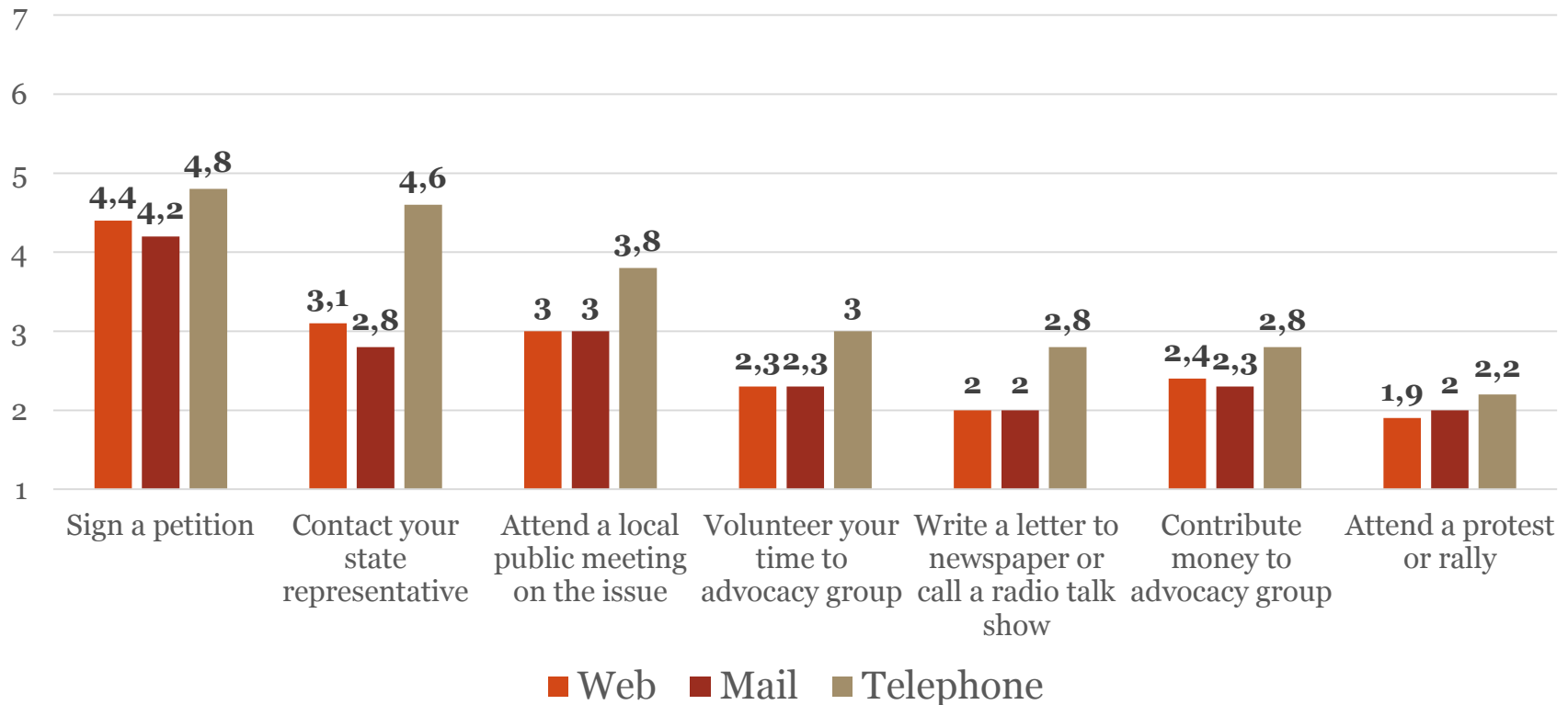
# Mode Effects Controlling for Demographics?

Support for Govt. Regulations X Mode  
(Estimated Marginal Means)



# Mode Effects Controlling for Demographics?

Issue Activism X Mode  
(Estimated Marginal Means)



# Moderation or Mediation?

- Does the survey mode change the slope of the relationship between X and Y (i.e. moderation)?



**NO!**

# Mode Effects

- Does the survey mode have indirect effects? (i.e. mediation)



**YES!** (partial mediation)

- Indirect Effects on Policy Pref / Issue Activism
  - Trust
  - Risk
  - News Attention

# Conclusions

- Major differences in demographics
- Differences in behaviors/attitudes when comparing CATI vs. Web/Mail and CATI/Web vs. Mail
  - Social desirability of CATI respondents?
  - Psychological isolation/distrust of mail respondents?
- Mode differences were partially mediated – still direct effects of mode on criterion variables
- Internet respondents shared attitudes/behaviors of both mail and CATI – less bias than expected



# Mode Effects Surveying Internet Users?

- Some of the differences in the USA study may be partially explained by differences in Internet access between sample
- But what about survey mode effects **WITHIN** an online population – i.e. between Internet users surveyed by different methods

# The Case of Turkey

- Approximately 50% of Turkish citizens have access to the Internet
- Pre-election study about online and social media behaviors and activism around Turkish election

# Online vs. Face to Face

- Face to Face Household Survey
  - Nationally representative
  - @ One hour long interview
  - Census Data for block groups
  - Each household visited 3 times, no replacement
  - 55% response rate, @\$25 cost per respondent
  - 4000 addresses yielded 2201 respondents – about 1044 Internet users
  - Takes @ six weeks of field work
  - Post-stratification weights as needed (age, gender, education, region, ethnicity)

# Online vs. Face to Face

- Commercial Panel of Turkish Internet Users
  - Non-probability panel volunteer survey panel
  - Receive @\$1 per completed survey
  - Complete 30-35 minute online survey
  - Costs \$13 per “valid” survey complete
  - One week of field work
  - Quota “matching” sample to demographics of Internet users based on previous f2f survey
  - 6779 survey attempts yielded 2000 “valid” survey completes (more on this later)

# Comparison of Demographics

<b>Demographic</b>	<b>Internet Users F2F Household Survey (n=1044)</b>	<b>Internet Users Commercial Panel (N=2000)</b>
Male	55%	61%
Educational Attainment		
Primary education or less	16%	2%
Secondary or high school	57%	46%
Some college or more	27%	52%
Kurdish Ethnicity	11%	7%
Age Category		
18-34 yrs	49%	59%
35-54 yrs	43%	37%
55+ yrs	8%	4%
Sunni Muslim	92%	83%
Pray More Than Once a Week	38%	40%

# Comparison Vote Intentions

<b>Vote Intention June 7, 2015 General Parliamentary Election</b>	<b>F2F Household Survey All Respondents (n=2200)</b>	<b>F2F Household Survey Internet Users (n=1044)</b>	<b>Internet Users Commercial Panel (N=2000)</b>	<b>Actual Vote Results</b>
Justice & Development Party (AKP)	34.6	29.7	19.9	40.9
People's Republican Party (CHP)	21.0	25.1	28.7	25.0
Nationalist Movement Party (MHP)	11.2	13.3	12.3	16.3
People's Democratic Party (HDP)	9.2	7.0	5.3	13.1
Undecided	26.3	26.9	25.4	-

# Political Leader/Economic Ratings

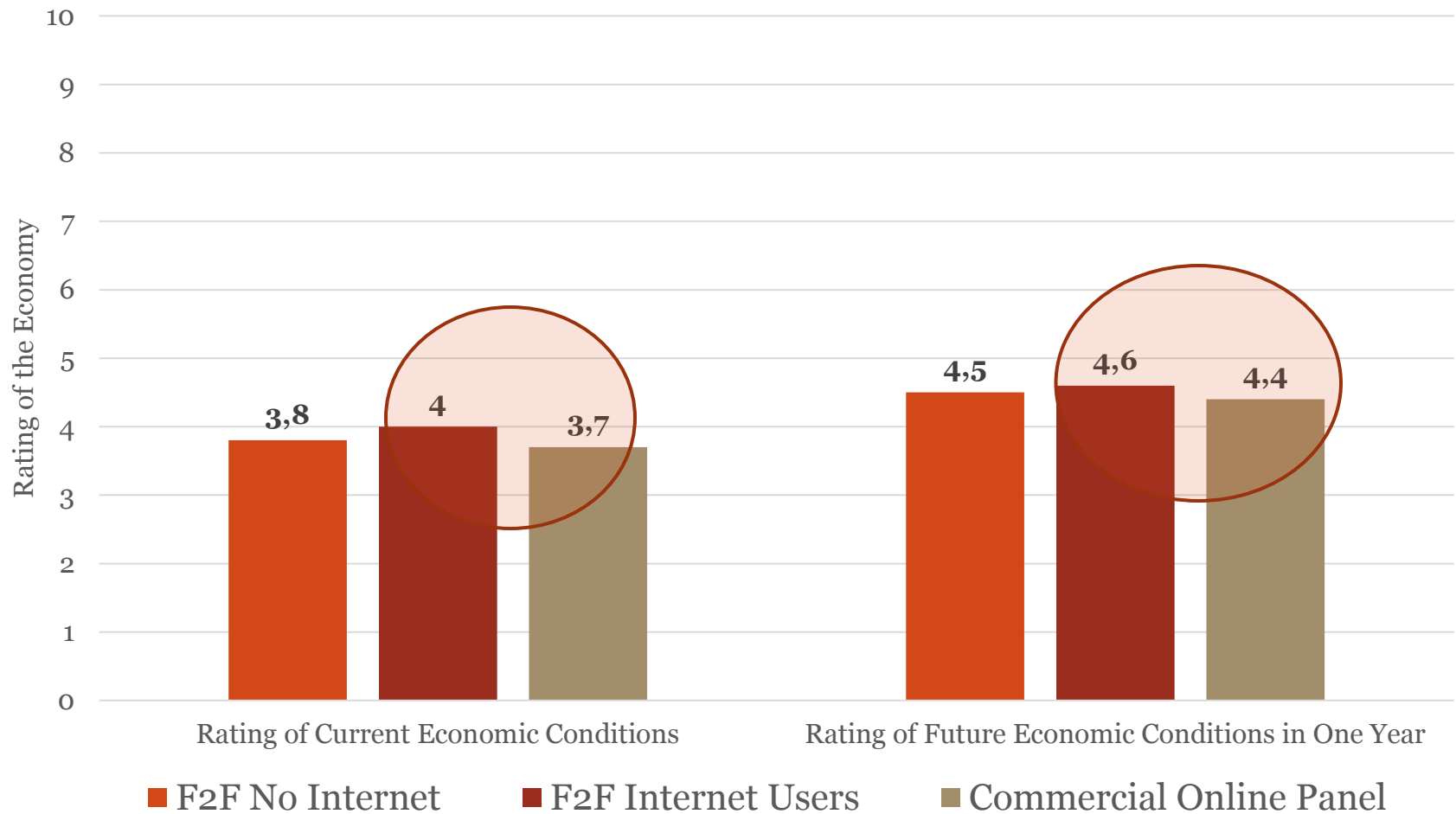
Ratings	F2F Household Survey All Respondents (n=2200)	F2F Household Survey Internet Users (n=1044)	Internet Users Commercial Panel (N=2000)
Political Leaders	Mean Favorable Rating (0-10)		
President Erdoğan	5.0	4.4	3.3
Prime Minister Davutoğlu (AKP)	4.5	4.1	3.3
Kemal Kılıçdaroğlu (CHP)	3.6	3.7	4.2
Selahattin Demirtaş (HDP)	2.6	2.3	1.8
Devlet Bahçeli (MHP)	3.4	3.5	4.0
Economic Perceptions	Mean Economic Rating (0-10)		
Current Econ Conditions	4.1	4.1	3.4
Future Econ Conditions (1 yr)	4.8	4.6	3.9

# Information Behaviors (% use everyday)

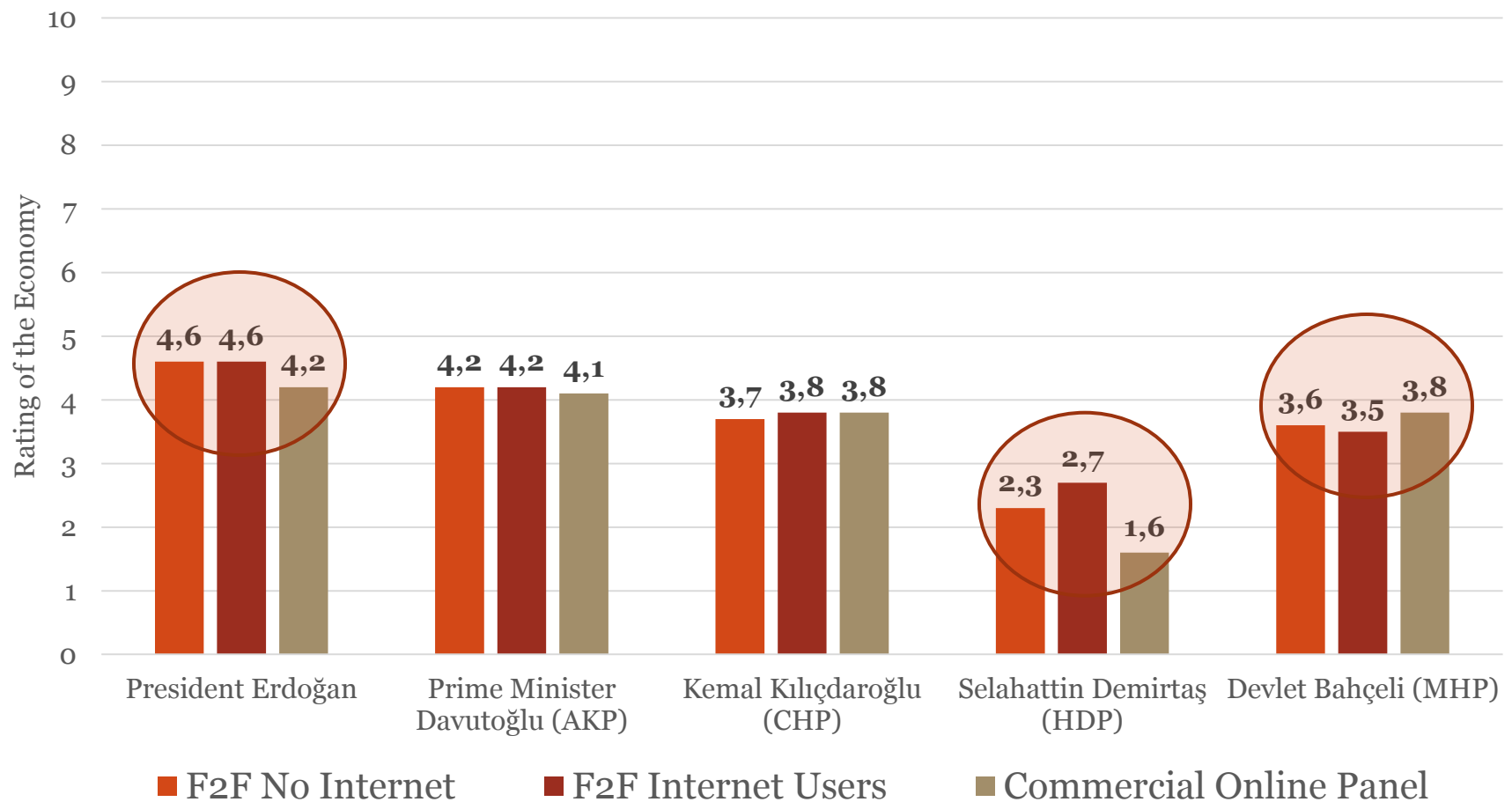
<b>Information Behaviors</b>	<b>F2F Household Survey Internet Users (n=1044)</b>	<b>Internet Users Commercial Panel (N=2000)</b>
Watch TV	76%	57%
Read Newspaper	31%	55%
Use Internet for news	44%	72%
Send and receive email with friends and family	18%	34%
Use online social networking sites	58%	78%
Read entries or opinions or on a political blog or website	7%	15%
Search online for information on political leaders or issues	8%	21%
Discuss political issues with others on social media	4%	10%



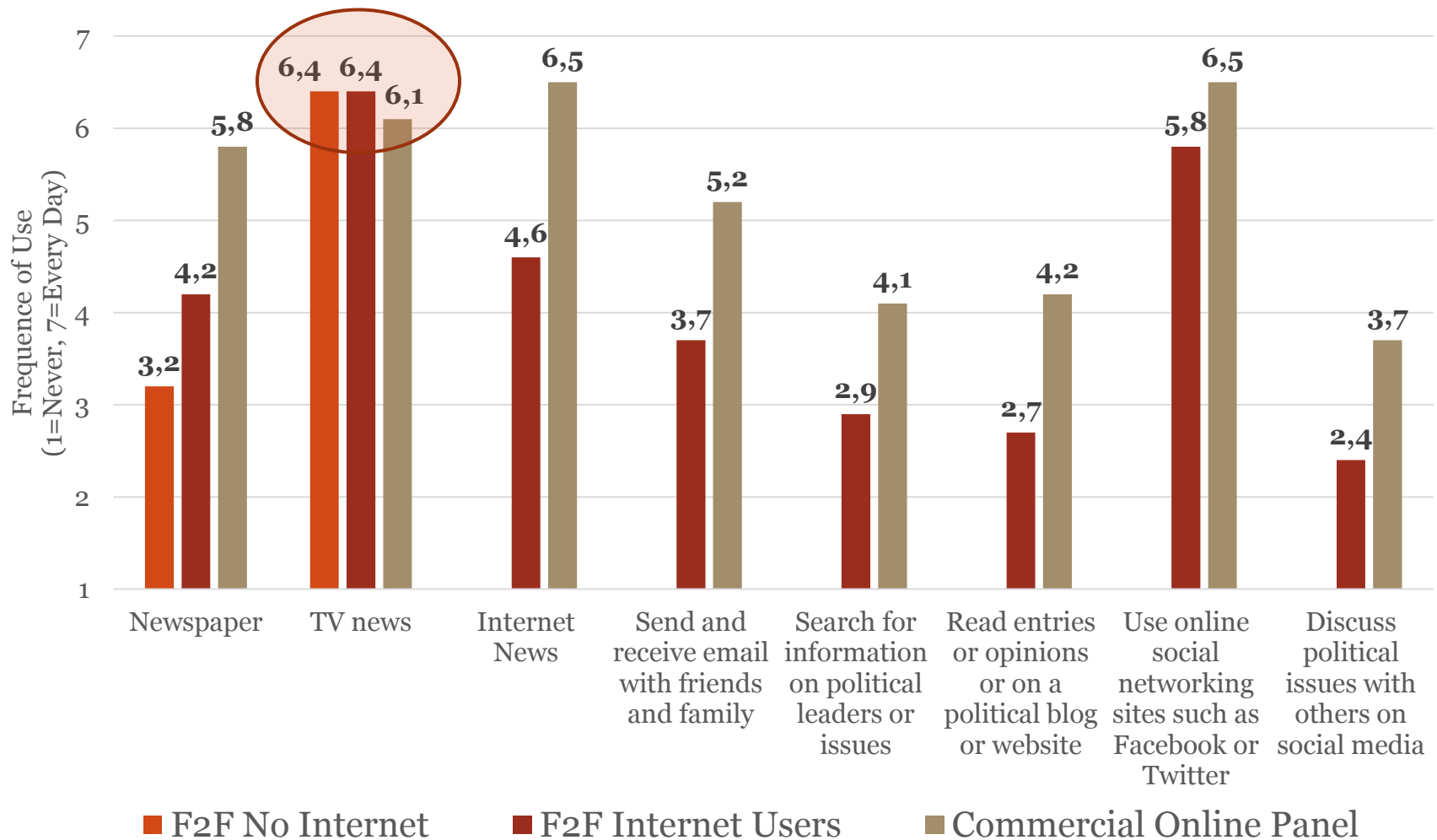
# Differences in Economic Perceptions Beyond Demographics & Vote Choice



# Differences in Leader Ratings Beyond Demographics & Vote Choice



# Differences in Information Behaviors Beyond Demographics & Vote Choice



# Moderation or Mediation?

- No evidence of moderation
- Relationship between sample type and leader and economic ratings was mediated by information behaviors (indirect effects)
  - Frequency of social media use
  - Reading blogs and websites
  - Discussing political issues via social media
  - Frequency of TV News viewing

# Conclusions

- Key demographic differences between samples, commercial online sample highly biased – especially minorities
- Large differences in communication behaviors that cannot be accounted for by demographic differences
- Controlling for demographic differences reduces bias between samples for many political and economic ratings
- Taking into account bias in frequency of information behaviors further reduces between-sample differences

# Hyperactivity & Satisficing

- Commercial Online Panel
  - Respondents sign-up to receive money to do surveys
  - Incentive is to do as many surveys in as quick a time as possible – not necessarily data quality
  - Possible Biases
    - “Speeders”
    - Response set bias
  - How do we employ quality checks to evaluate cognitive engagement with questionnaire beyond simply time spent?

# Cognitive engagement

- Quality control measures
  - Add “screener” or “check” questions that assess attention and engagement with self-administered online questionnaire
  - Research in USA shows that correct answers to such questions are positively correlated with political relevant characteristics
  - Not including screeners may reduce generalizability of results

# Examples

- United States Survey
  - 4740 took survey – 1135 valid surveys (23.9%)
- Russia Federation
  - 2706 took survey – 1350 valid surveys (49.9%)
- Turkey
  - 3056 took survey – 2000 valid surveys (65.4%)



# Example Screener Questions

- Please tell me how closely you followed news and information about the following topics or issues.
  - Please select "not too closely" for this question
- Now let's talk about what kinds of activities you like to do on the Internet. Please tell me how often you use the Internet to do any of the following things. Please tell how often you use the Internet to the following activities.
  - Please select "Once a Month" for this question

# Example Screener Questions

- “The 2022 World Cup will be played in Qatar.”
  - Please select “definitely false” for this question.
- We would like to know your feelings towards some political figures and groups on a scale from 0-10.
  - Please select "7" for this question

# Example Screener Questions

- How much do you agree or disagree with the following statements about how you feel about Turkish politics?
  - Please select "Agree" for this question

# Case Study #3 - Turkey Commercial Panel

- Added five “screener” questions to assess quality engagement with the survey

# of Screeners Answered Correctly	Number of Respondents	Mean Complete Time and Standard Deviation (minutes)
0	422	15.2 (61.0)
1	220	34.5 (111.6)
2	207	34.3 (98.5)
3	143	29.6 (27.8)
4	605	34.8 (54.2)
5	1459	38.1 (61.2)

# What predicts probability of answering Screener Qs correctly?

Probit Regression (Explains 21.8% of Nagelkerke Variance)

Significant Predictors	Estimate	Standard Error
Educational Attainment	.05**	.02
Gender (Female)	.13***	.05
Attention Parliamentary Election News	.13***	.03
Internet News Use	.04*	.02
Use online social networking sites	.17***	.02
Reading news headlines social media	.08***	.02
Buying or ordering goods or services online	-.05***	.02
Reading messages from political leaders or parties on social media	-.06***	.02
Recruiting people to get involved with political issues via social media	-.10***	.02
Posting negative comments criticizing Turkish political leaders via social media	-.06***	.02

# Conclusions

- Screeners are key for data quality control beyond assessing time spent on survey
- Highly correlated with key demographic and politically relevant variables
- Information-seeking behaviors positively correlated?
- Information-expression or online purchasing negatively correlated?

# Summary

- Internet data collection as compared to other modes offers many advantages
- BUT
  - Key demographic, psychological, and behavioral differences with other survey modes – even with Internet users
    - Quota sampling or weighting not necessarily sufficient
  - Data quality must be monitored and assessed beyond time spent and drop-out rates through cognitive attention assessments
  - Challenge is to identify other means of data quality assure for online commercial panels

Thank You!

Questions or Comments??