EMPIRICAL TESTING OF STRATEGIC VOTING: AND ITS IMPLICATIONS FOR CHOICE EXPERIMENTS

Mentor: Dr. Matthew G. Interis

Presenter: Chang "Julie" Xu

Internship Location: Department of Agricultural Economics,

Mississippi State University

About My Mentor

- Dr. Matthew G. Interis, Ph.D., The Ohio State University, 2009
- Assistant Professor in Agricultural Economics Department at Mississippi State University
- Area of Study: non-market valuation; welfare economics; environmental economics; environmental policy; survey design.

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About Me

- First-year Master Student major in Agricultural Economics at Mississippi State University

- Area of interests: environmental evaluation, welfare economics, and developmental economics

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Background Information:

- What is choice experiments?

  It is a non-market valuation method;

  It employs surveys, experiments to elicit useful information for non-market value estimating.

- Strategic voting in choice experiments.

  Estimates from choice experiments are valid only when the experiment/survey is incentive-compatible

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Background Information:

Dr. Interis' previous work on similar topic:

- Interis, M. and T. Haab. "Overheating Willingness to Pay: Who Gets Warm Glow and What it Means for Valuation."

- Kang,H.,T.Haab, and M. Interis. "Identifying Inconsistent Responses in Dichotomous Choice Contingent Valuation with Follow-Up Questions."

- Interis, M. and D. Petrolia. "Face the Consequentiality: Useless, Useful, and Truthful Responses to Hypothetical Surveys"

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Background Information:

an example of wild life protection choice experiments

options attributes	Option 1 (status-quo)	Option 2	Option 3
Cost	0$	20$	30$
population of species A	100,000	250,000	350,000
habitat area of A	200	300	400
B's population (which is a biological related species)	150,000	200,000	300,000

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Description Of My Work

- Researchers want to know to what extent does strategic voting happen in choice experiments.

- So we would like to do an experiment to mimic choice experiments and examine strategic voting empirically.

- Before a final experiment, researchers will do expert panel, focus groups, pretest, pilot test to investigate whether the designed experiment will be able to shed lights on question of interest.

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Description Of My Work

❑ Doing pretest experiment is what I did during the internship.

❑ We held four sessions of pretests, on June 19th, June 20th, June 21th, and 27th , with 13, 15, 16 and 10 participants in each session.

❑ We did the pretest on Experimental Lab Room 001 at Department of Agricultural Economics in Mississippi State University.

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Pictures of interning

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Aims For This Pretest

1. Decide the appropriate experimental goods to be used in the final experiment;

Aims For This Pretest

2. Get initial answers to the following questions:

- To what extent does strategic voting occur empirically?

- What factors lead to strategic voting?

- How to make implications about strategic voting on choice experiments?

During The Pretest:

- every participant was asked to vote for one out of three options under two decision rules:
  1. plurality rule;
  2. pay-and-go rule.

During The Pretest:

- Participants were also asked about their perception of how other people will vote.

Which of the following statements best describes your perception of other participants' votes under rule 1?
(1)I think the votes for all three options will be roughly even.
(2)I know which option will get the most votes, and the votes for other two options will be roughly even. Which option do you think will get the fewest votes?
(3) I know which option will get the least votes and the votes for other two options will be roughly even. Which option do you think will get the most votes?

(4)I think I know which option will get the most votes, which will get the second most votes, and which will get the fewest votes.

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Theoretical Prediction Of Strategic Voting

Preference order	Perceptions about others' votes	Vote under plurality rule	Vote under pay and go rule
ABC	(ABC)	A	A
ABC	A(BC)	A	A
ABC	B(AC)	A	A
ABC	C(AB)	A	A
ABC	(BC)A	B	A
ABC	(AC)B	A	A
ABC	(AB)C	A	A
ABC	ABC	A	A
ABC	ACB	A	A
ABC	BAC	A	A
ABC	BCA	B	A
ABC	CAB	A	A
ABC	CBA	B	A

Voting Result

Choice set	# of participants	# of mismatch votes	# of strategic voting
1	14	4	0
2	39	9	0
3	52	9	1
4	25	8	1

Notes: We assume that mismatched voters are insincerely voting; unmatched voters with certain perceptions are strategically voting.

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Data Analysis

Logit Regression:

$$x(unmatched) = \alpha_0 + \alpha_1 prior + \alpha_3 \mathbf{z} + u$$

Dependent Variable	X(unmatched)
intercept 1	-6.0140(1.7743)***
intercept 2	1.7935(0.6355)***
prior	-1.3624(0.5097)***
getsprefrank	-0.2053(0.0897)**
gender	0.5161(0.1326)***
age	-0.0389(0.0254)
N	259

Notes:* refers to significant level of 10%; ** refers to significant level of 5%; *** refers to significant level of 1%.

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Conclusions

- Strategic voting occurs at a low frequency in each choice set;

- We expect there are more strategic voters than we observed because some types of strategic voters are non-observable;

- If a voter holds the perception that his most unconditionally preferred option will be voted least, then he has greater chance of strategic voting.

What I have Learned During The Experiment

- You can never be careful enough when designing a survey/experiment, all the details need to be taken care of;

- I need to be a flyer poster, an accountant, a Photoshop expert, and good at communication to be able to do a good survey/experiment.

Challenges We Met

1. How to make implications from this experiment to real life choice experiments?
2. Recruiting participants.
3. Get useful information from the data.

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Acknowledgements
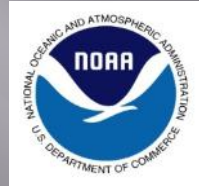
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