Information and Advertising: Multivariate Matching with Campaign Exposure

1. In Brief
I investigate the impact of campaign exposure on individual political knowledge with a potential confounder framing. Utilizing multivariate matching with exposure, I find that individuals learn from campaign exposure.

2. Questions
- Do campaign advertisements affect individuals’ political knowledge?
- Is it appropriate to think of presidential campaign exposure as a dichotomy?
- How can one properly match on an ordinal treatment?

3. Overview
I investigate the impact of campaign advertisements on political knowledge in the 2000 presidential election. I model the relationship between advertisements and individuals’ information with a potential outcomes framework: multivariate matching with exposure.

4. Methodological Hurdles: Endogeneity and Confounders
- Campaign exposure and political knowledge are correlated, as so are those of greater political information are likely to both increase individuals’ understanding of candidate policy platform knowledge.
- Existent literature has underestimated such an effect due to unattenuated dichotomization of campaign exposure.

5. Methodological Solution: Multivariate Matching with Exposure
In matching treated subjects to untreated controls, distances vary, and distances presented here are not bisected in the groups to create a dichotomy.

6. Data: 2000 Presidential Election
Annenberg: 1992 observations from the post-election survey.
Dependent Variable: political information
10 point index of political questions
In this presentation I have limited the questions to candidate policy platforms. However, the effects of exposure on various other dimensions of information are at the core of my dissertation.
Covariates: political variables, demographics, and news consumption
Wishes: Treatment Variable: Campaign Exposure
Quantity of presidential campaign advertisements by DMA from Wisconsin Advertising Project

7. Post-Matching Balance
- Balances one to one on all observations for a total of 996 matched pairs
- Strong balance on all covariates, in particular the self-reported news consumption variables
- Mean scores are virtually identical – as are the distributions; most with small standard deviations
- Standardized linear prediction of exposure is a match for treated and controlled.

8. Results: Treatment Effect of Campaign Advertisements on Political Information
- Advertisements increase individuals’ level of information on candidates’ policy platforms.
- Hodges-Lehmann point estimate is .5 with a p-value < .01
- On average we should expect about a half of a point more information for those in locales with more presidential campaign advertisements
- In other words, they do about 5% better on the policy platforms than their less exposed counterparts

9. Compare Results to Dichotomous Treatment Effect
- There is no effect for a dichotomous treatment of campaign exposure on political information

10. Results: Rosenbaum Sensitivity Analysis
- Range of possible magnitudes of hidden biases, measured by l
- Want to know the impact of hidden biases: how large the odds of treatment due to unobserved pre-treatment differences would have to be to change the results
- Here, if we forget to control for a key covariate, that covariate would have to be at least l=1.1 times more common among the treated to reach results that could qualitatively change the conclusions of the study

11. Take Away Points:
1. Exposure to campaign advertisements increases individuals’ knowledge of candidate policy platforms
2. Operating on campaign exposure as a dichotomy may underestimate such a finding
3. The heterogeneous matching with exposure is non-bipartite and optimal (Dunge 1988), and appropriate for a host of social science questions that expect heterogeneous effects

12. The Larger Project
- Dissertation: The Electoral Intersection: Information and Context
- General indices appropriate measures of political knowledge?
- If not, as I maintain, which dimensions of political knowledge are impacted by campaigns?
- Compare questions of candidate biography, policy platforms, and general political institutions
- Analysis of exposure to content (contextual level) and reception (individual level)
- Advertisements have on effect on individual's level of civic or institutional information
- The interaction between campaign and political behavior have different effects conditional on the kind of information