Multi-Method Experiments and Concept-Formation

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What Makes a Good Concept?

In the Sartori tradition, we want to:

- Choose usages that preserve the meanings of neighboring concepts
- Respect common and scholarly meanings for the terms in question
- Capture well-established core defining attributes
- Make sure that prototypical cases are sorted appropriately

Example: Extremism

There are over 2000 articles in Political Science and Sociology journals since 1990 that use the concept of extremism ("extremists", etc.).

```
processed_extremism <- textProcessor(documents=final_db$full.extremist.text,
                                     metadata=final_db, customstopwords=c("wiley","library","librarian","http",
                                                                          "northwestern","httpsonlinelibrarywileycomterms--condit",
                                                                          "httpsonlinelibrarywileycomterms--condit",
                                                                          "httpsonlinelibrarywileycomdoipoi",
                                                                          "https*"))

prep_extremism <- prepDocuments(processed_extremism$documents, processed_extremism$vocab, processed_extremism$meta)
```

```
> labelTopics(extremism7.stm)
Topic 1 Top Words:
         Highest Prob: parti, extremist, moder, voter, candid, vote, elect
         FREX: district, nomin, equilibria, soft-lin, roll-cal, cosponsorship, reelect
         Lift: equilibria, --equilibrium, --touch, -averag, -bill, -divers, -equilibrium-path
         Score: voter, candid, parti, nomin, district, vote, nomine
Topic 2 Top Words:
         Highest Prob: violenc, extrem, terror, violent, muslim, support, group
         FREX: pyszczynski, anti-muslim, gbv, mccauley, al-shabaab, vergani, homegrown
         Lift: abc, tornberg, -donat, aaden, abat, abaya, abba
         Score: muslim, terror, violent, religion, counter-extrem, anti-muslim, islam
Topic 3 Top Words:
         Highest Prob: extrem, polit, parti, ideolog, extremist, studi, variabl
         FREX: polaris, left-right, lwa, rokeach, eysenck, hiel, adorno
         Lift: --sampl, -said, absolutevalu, acqui, adorno, affirmat, agfi
         Score: parti, variabl, score, polaris, authoritarian, right-w, coeffici
Topic 4 Top Words:
         Highest Prob: polit, group, extremist, public, organ, movement, social
         FREX: racial, environmentalist, klan, aryan, blee, ethno-nationalist, color-blind
         Lift: -file, african-american, alarmist, allus, amendmentist, andvig, anti-nuclear
         Score: racial, white, movement, racism, immigr, racist, protest
Topic 5 Top Words:
         Highest Prob: onlin, extremist, counter, use, violent, social, extrem
         FREX: cve, creativ, licens, httpsonlinelibrarywileycomterms--condit, httpsonlinelibrarywileycomdoipoi, los, counter-narr
         Lift: contrarrestar, counter-narr, derogatori, extremista, rede, sobr, 极端主义
         Score: cve, las, httpsonlinelibrarywileycomterms--condit, offlin, httpsonlinelibrarywileycomdoipoi, counter-narr, onlin
Topic 6 Top Words:
         Highest Prob: parti, polit, extremist, democraci, democrat, state, extrem
         FREX: hutu, rwanda, nato, tutsi, weimar, czechoslovakia, kirschner
         Lift: czechoslovakia, tutsi, ---, -develop, -inclus, -limit, -percent
         Score: parti, democrat, democraci, jess, militari, hutu, elector
Topic 7 Top Words:
         Highest Prob: extremist, media, onlin, content, social, extrem, use
         FREX: adolesc, literaci, differ, hawdon, costello, nienierza, identitarian
         Lift: feather, flock, lmu, sssl, aadmi, aam, aasim
         Score: literaci, adolesc, media, extremism-rel, encount, hawdon, differ
```

A white, college-educated vegan who plans to replace existing social and political institutions entirely, is strictly nonviolent, represents a loose network of online people with similar views, and has close ties with some charismatic politicians.

A Black, high-school-educated Christian theocrat who plans to replace existing social and political institutions entirely, is strictly nonviolent, represents a well-organized group of people with similar views, and has close ties with some charismatic politicians.

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Routledge
Taylor & Francis Group

Commitment to Extremist Ideology: Using Factor Analysis to Move beyond Binary Measures of Extremism

Ashmini G. Kerodal[a], Joshua D. Freilich[b], and Steven M. Chermak[c]

ABSTRACT

This study article focuses on American far-right (FR) extremists who committed ideologically motivated violent or financial crimes in the United States. We examine three research questions. First, are certain types of FR ideological beliefs associated with different types of criminal behavior? Second, can the various indicators of FR ideology be used to create a scalar measure of commitment to FR ideology? Third, which typology of the FR movement provides the most reliable measure of FR extremism? We use data from the United States Extremist Crime Database to measure indicators of FR ideology in a sample of 305 FRs who committed a financial crime or homicide between 2006 and 2010 in the United States. Conspiratorial, antigovernment, and antitax beliefs were positively associated with risk of financial crimes, while xenophobic, survivalist, and anti–gun control beliefs were positively associated with risk of violent crimes. A factor analysis created a commitment to FR ideology scale and identified four sub-types of FRs: Conspiracy Theorist, Survivalist, Movement Participant, and Proud far-rightist. The factor analysis did not support the prevailing typologies. Importantly though, these typologies were useful in predicting criminal behavior patterns of far rightists. We outline a number of other measurement issues for future research to address.

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Table 4. Initial commitment to ideology scale.

Rotated factor loadings						
Item	**Conspiracy theorist**	**Survivalist**	**Supremacist**	**Movement participant**	**Proud far-rightist**	**Tax-protester**
Is there any evidence that the suspect holds antigovernment beliefs?	**.943**	−.056	−.003	.032	−.041	−.101
Is there any evidence that the suspect holds conspiratorial beliefs?	**.748**	.071	−.006	−.061	.024	.217
Is there any evidence that the suspect is anti-gun control?	−.021	**.873**	.112	−.048	−.164	.124
Is there any evidence that the suspect holds survivalist beliefs?	.024	**.748**	−.132	.057	.196	−.174
Is there any evidence that the suspect holds xenophobic beliefs?	.059	.027	**.677**	.153	−.022	−.156
Does the suspect have a movement-related tattoo?	−.023	−.026	**.595**	−.162	.144	.038
Did the suspect deny s/he was a far-rightist?	−.117	−.005	.188	.139	−.035	.049
Is there any evidence that the suspect participated in movement activities?	−.001	−.001	.073	**.698**	.012	.107
Did the suspect claim to be a far-rightist (e.g., White supremacist/tax protester)?	−.018	−.003	.072	.011	**.579**	.096
Is there any evidence that the suspect is a tax-protester?	.133	−.019	−.076	.107	.087	**.679**
Eigenvalues	2.709	1.797	1.364	.964	.839	.770
Weight of factor	27.089%	17.969%	13.639%	9.636%	8.387%	7.703%
Cronbach's α	.849	.737	.566			
Variance explained by Scale						84.423%
Model Cronbach's α						.515

Factor Analysis

Assumptions:

- Meaning
- Descriptive homogeneity

Factor Analysis

Multi-method design components:

- Meaning: choose highly prototypical cases, look in-depth
- Descriptive homogeneity: focus groups or process tracing of coders

Multi-Method Conceptualization and Measurement

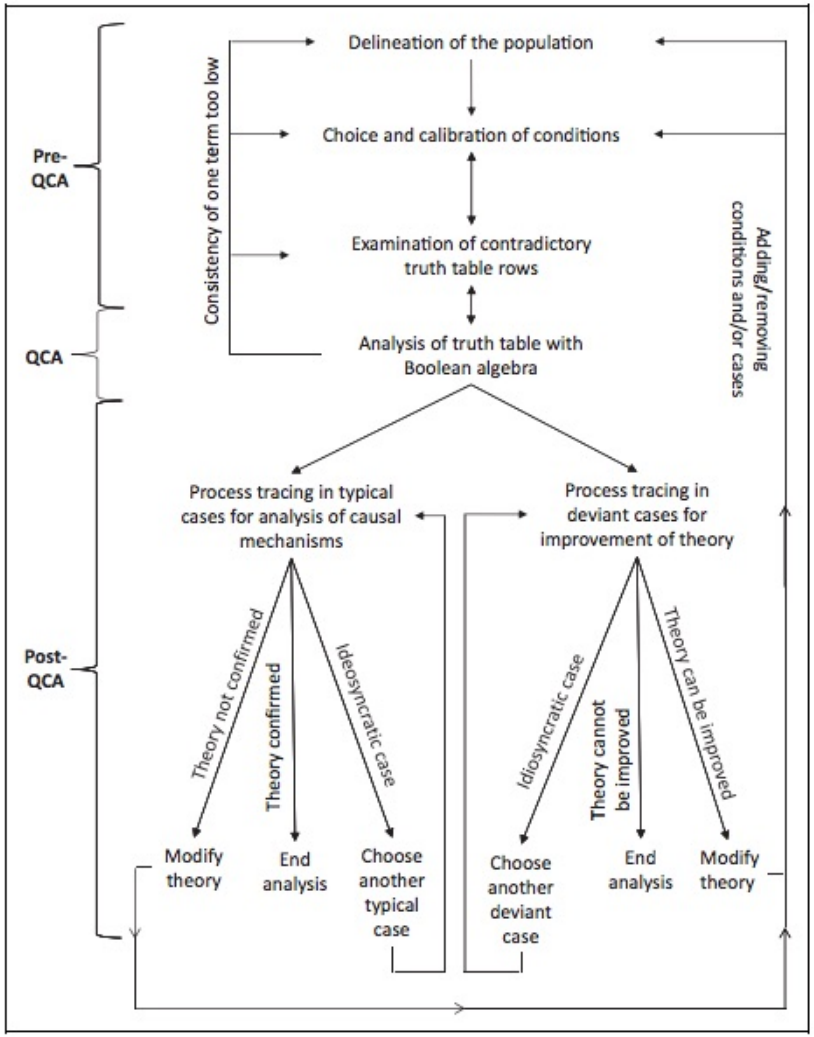
The Challenge of Building Theory

The Challenge of Building Theory

Deductive process tracing and the assumption that all alternative explanations are at hand.

QCA

QCA


Pre-QCA
QCA
Post-QCA
Delineation of the population
Choice and calibration of conditions
Examination of contradictory truth table rows
Analysis of truth table with Boolean algebra
Consistency of one term too low
Adding/removing conditions and/or cases
Process tracing in typical cases for analysis of causal mechanisms
Process tracing in deviant cases for improvement of theory
Theory not confirmed
Theory confirmed
Ideosyncratic case
Idiosyncratic case
Theory cannot be improved
Theory can be improved
Modify theory
End analysis
Choose another typical case
Choose another deviant case
End analysis
Modify theory

QCA

A great deal of complexity is involved in defining typical and deviant cases for QCA.

Why typical cases?

Machine Learning

CART

Optimally predicting Y based on $\mathbb{X}$, without assumptions of additivity, linearity, etc.

CART

CART

1. Start with the set of all cases, i.e., the root node.

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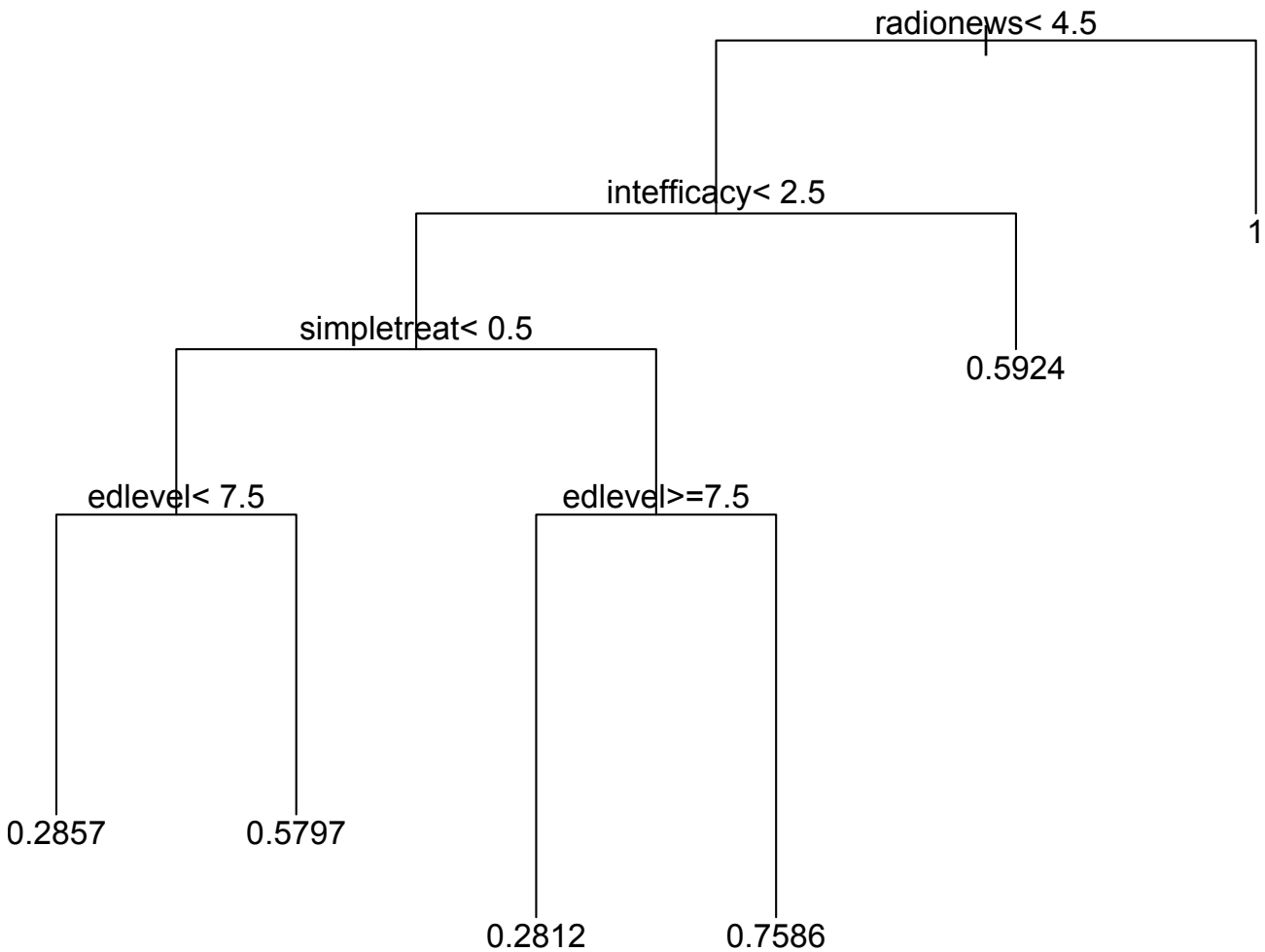
2. Search all values of each variable in $\mathbb{X}$ for the binary split that maximizes homogeneity of Y for cases on each side of the split.

CART

1. Start with the set of all cases, i.e., the root node.
2. Search all values of each variable in $\mathbb{X}$ for the binary split that maximizes homogeneity of Y for cases on each side of the split.
3. If homogeneity of Y is sufficient or if the remaining sets of cases as the new final nodes are too small, stop. Otherwise, repeat step 2 for each of the current last-generation nodes.

An Example

An Example


radionews< 4.5
intefficacy< 2.5
1
simpletreat< 0.5
0.5924
edlevel< 7.5
edlevel>=7.5
0.2857
0.5797
0.2812
0.7586

Simulation Studies

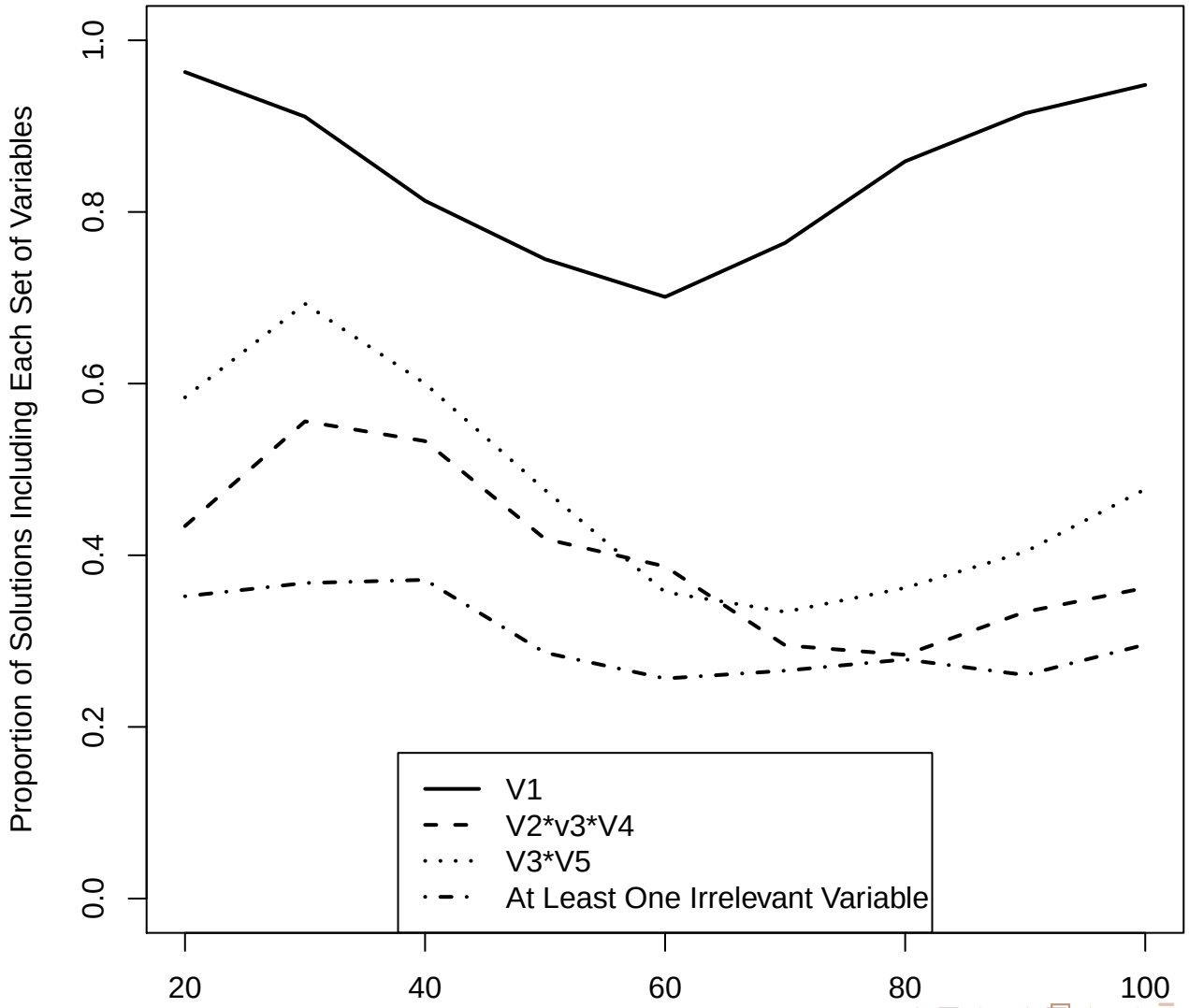
$$Y = X_1 + X_2 x_3 X_4 + X_3 X_5 \tag{1}$$

Simulation Studies

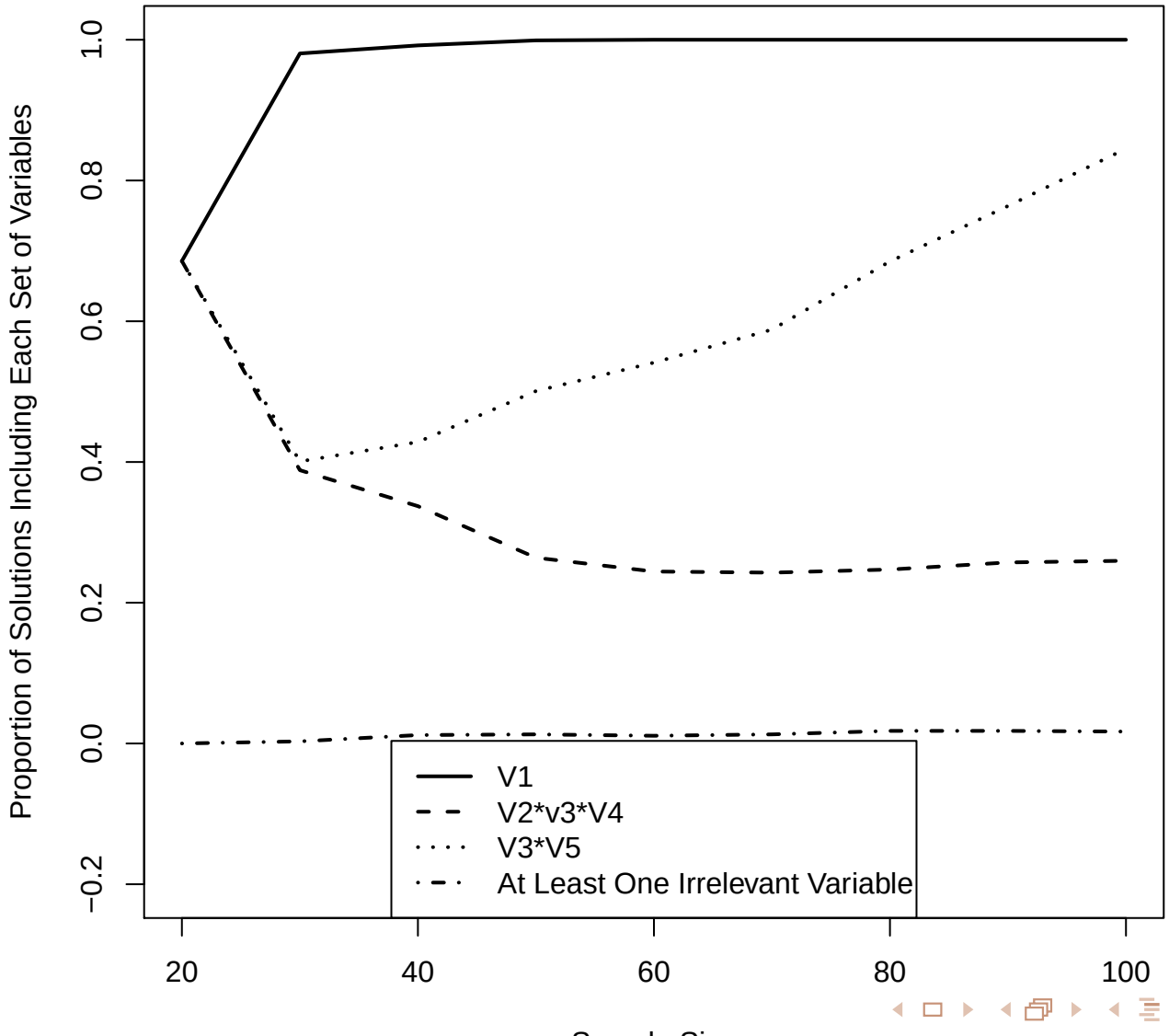
$$Y = X_1 X_9 + X_2 x_3 X_4 x_9 + X_3 X_5 X_{10} \qquad (2)$$

X_9 and X_{10} are unobserved.

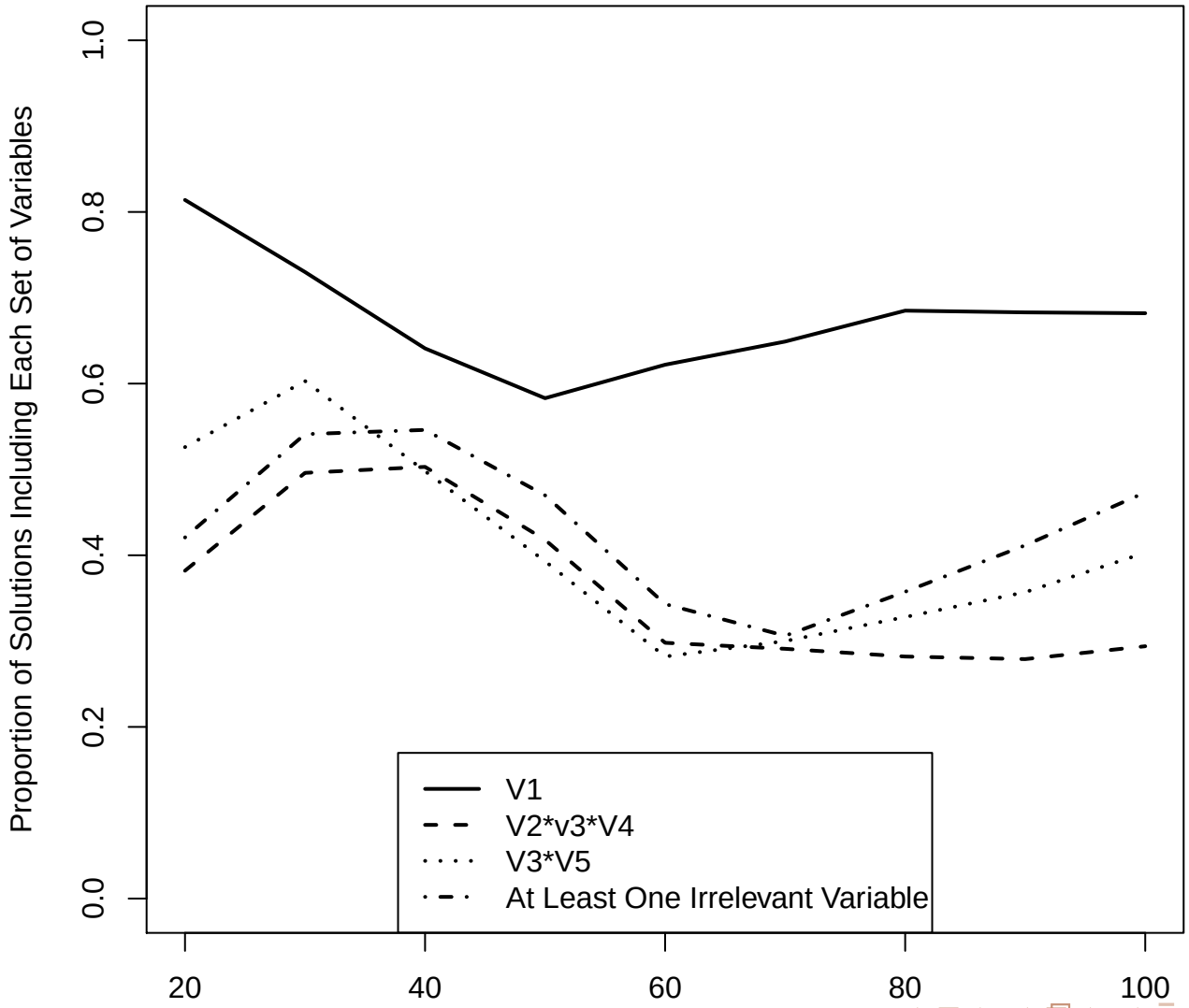
QCA: No Omitted Variables



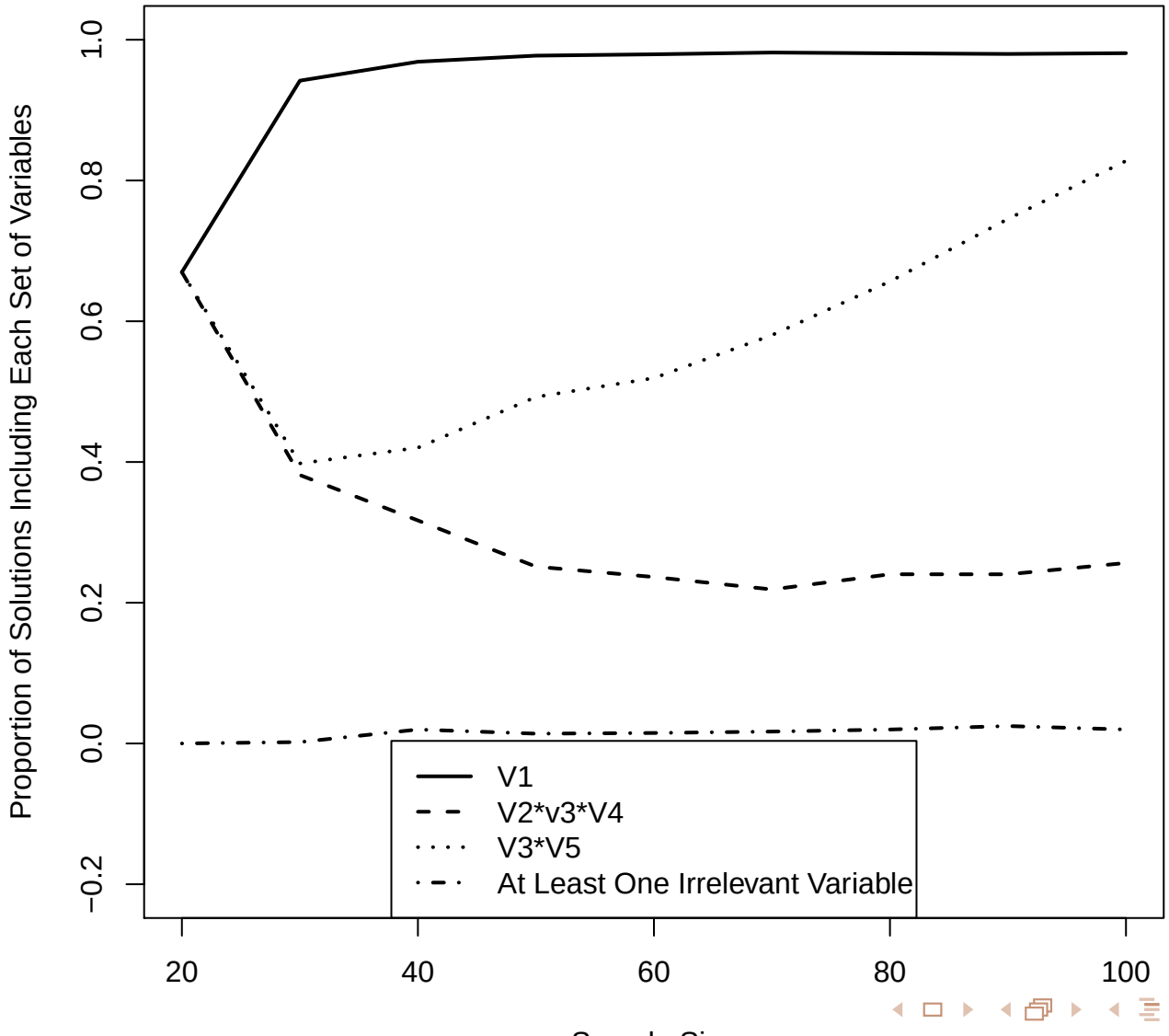
CART: No Omitted Variables



QCA: Omitted Variables



CART: Omitted Variables



CART and Qualitative/Multi-Method Research

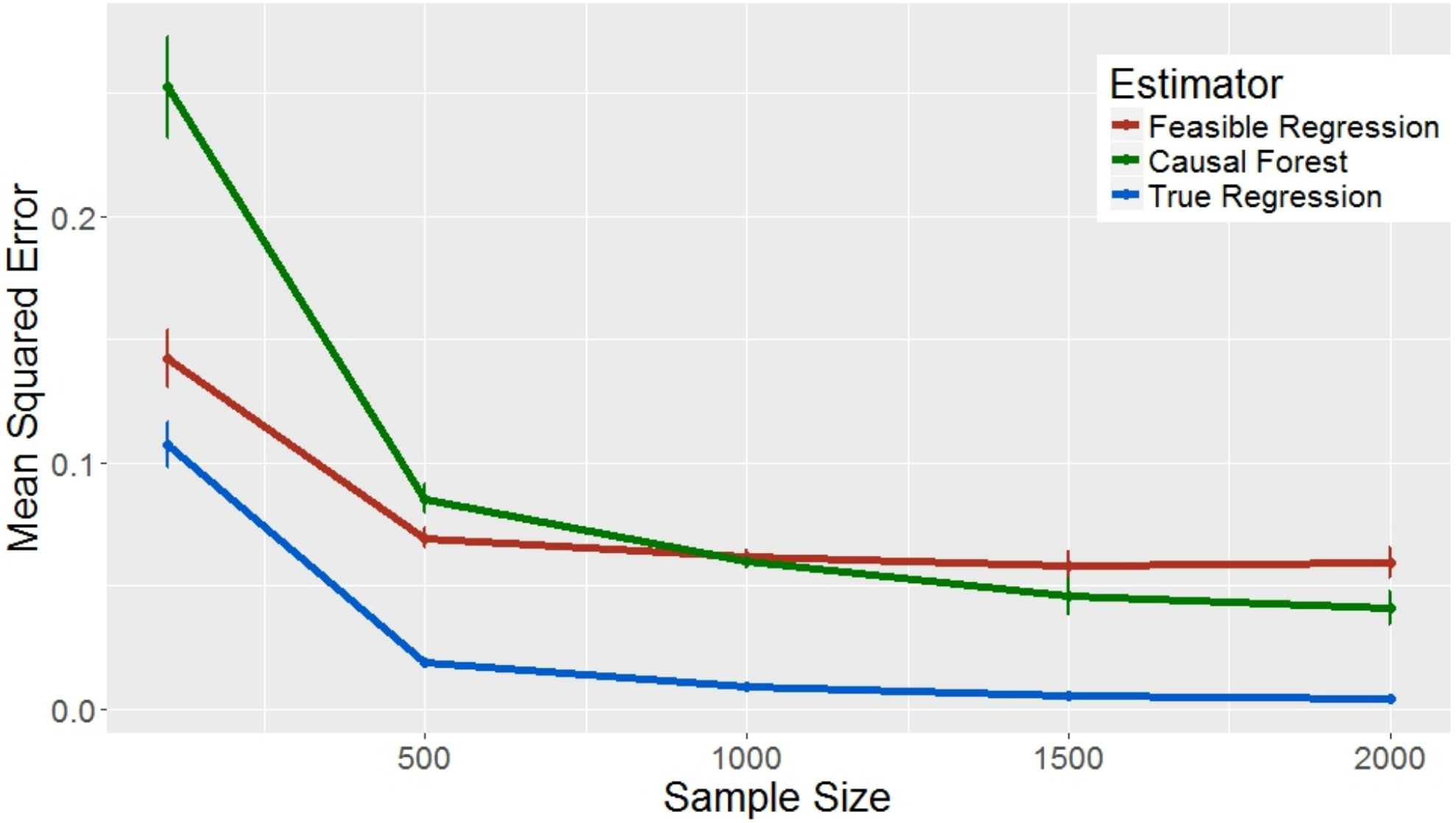
Can Causal Forests Help in Observational Studies?

Gauss-Markov Regression vs. Feasible Regression

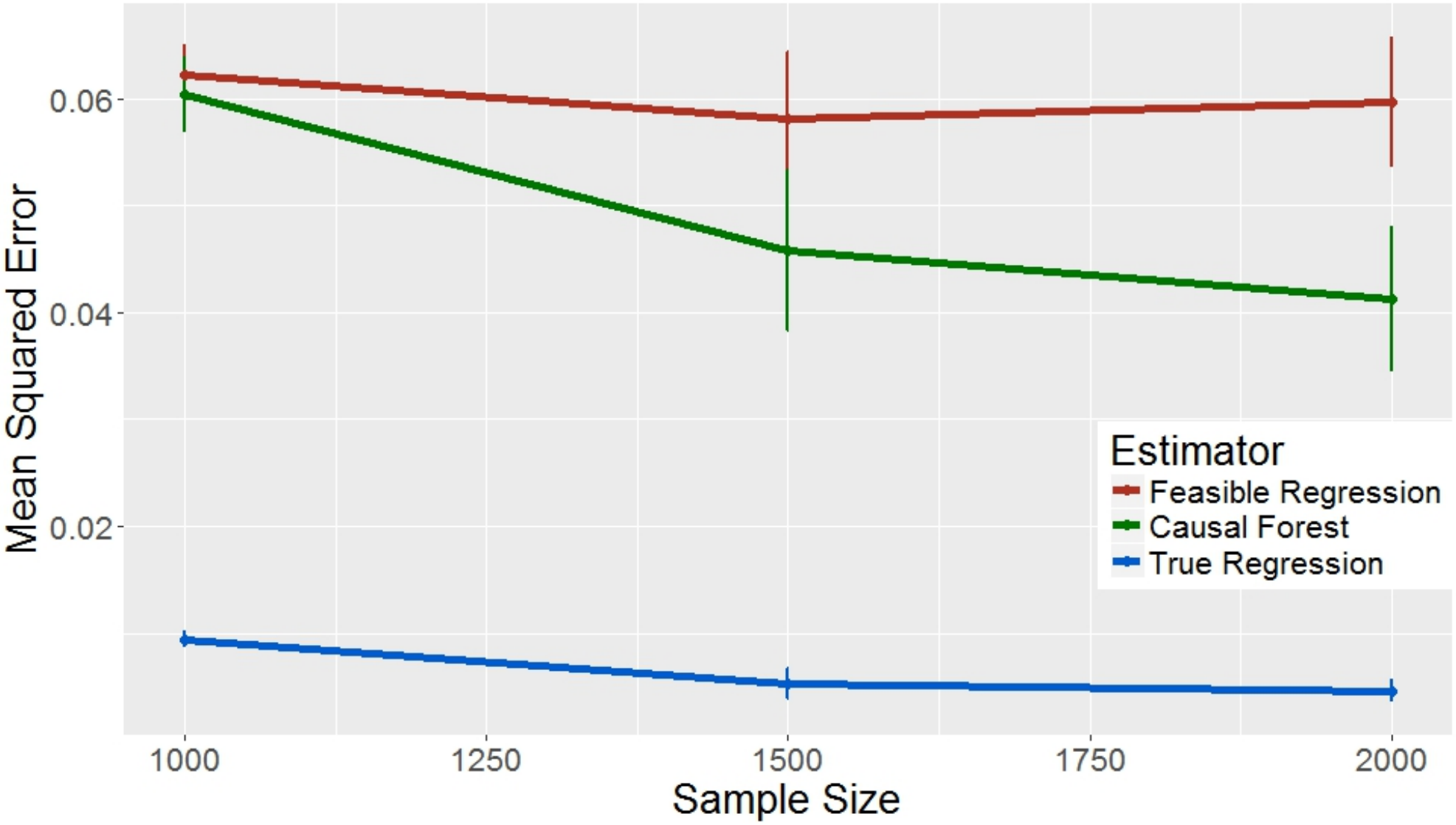
Monte Carlo Design

1. Generate list of potential confounders
2. Generate treatment, including relationship with actual confounders
3. Generate outcome, including causal effect of treatment and confounders
4. Estimate true regression, feasible regression, and causal forests estimator

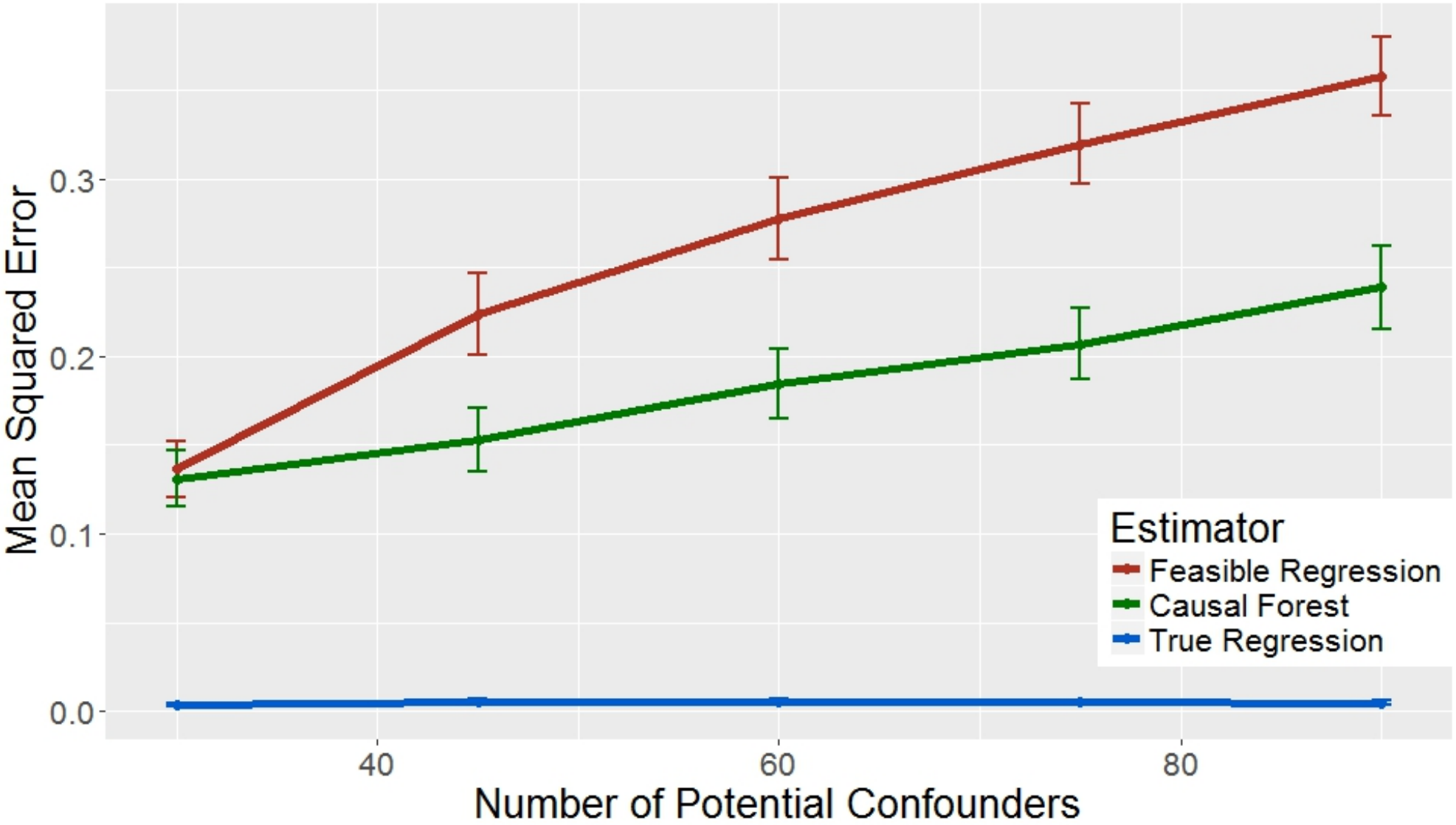
Monte Carlo Results



Monte Carlo Results



Monte Carlo Results



Did Populist Attitudes Cause Voters to Support Trump?

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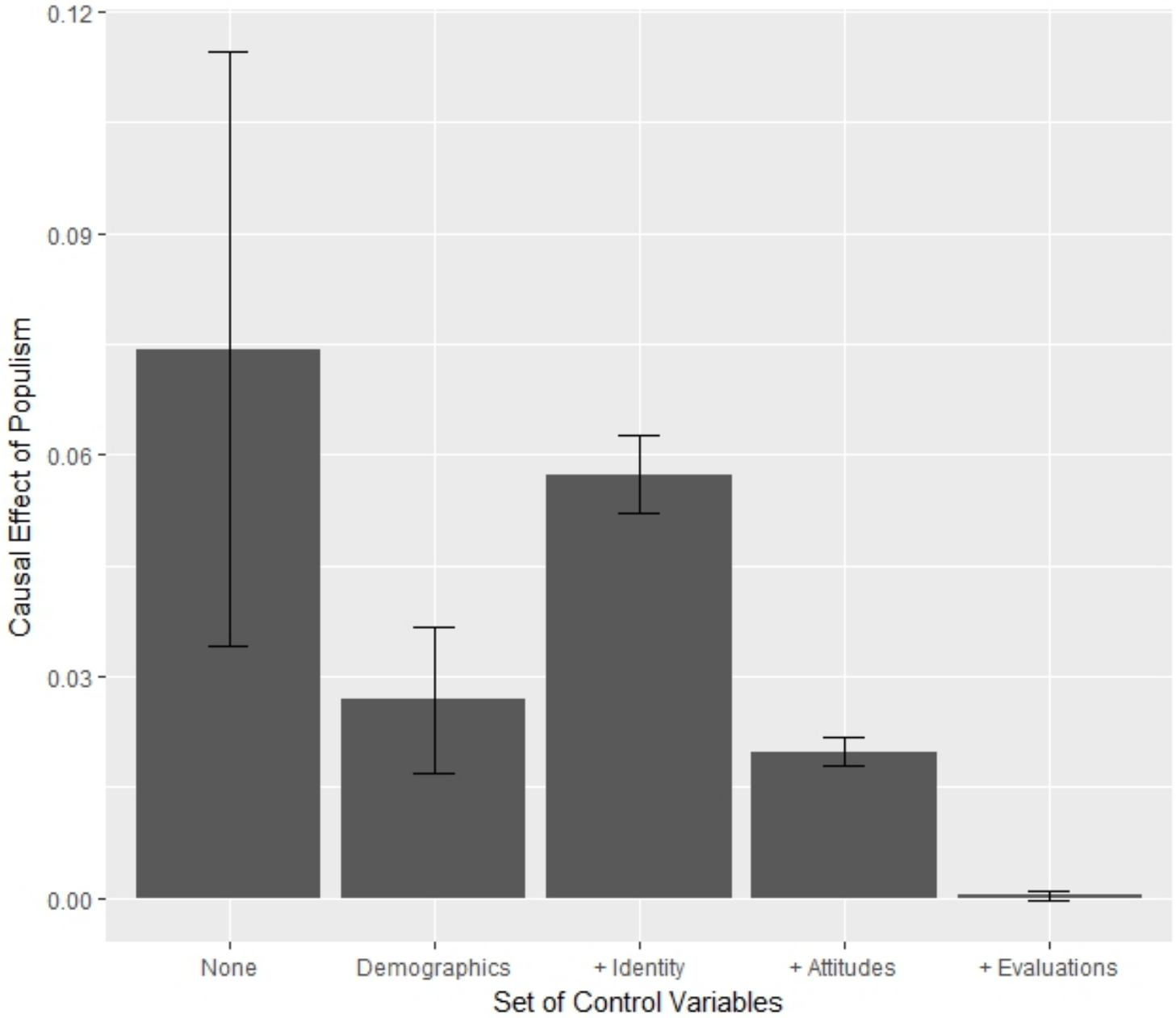
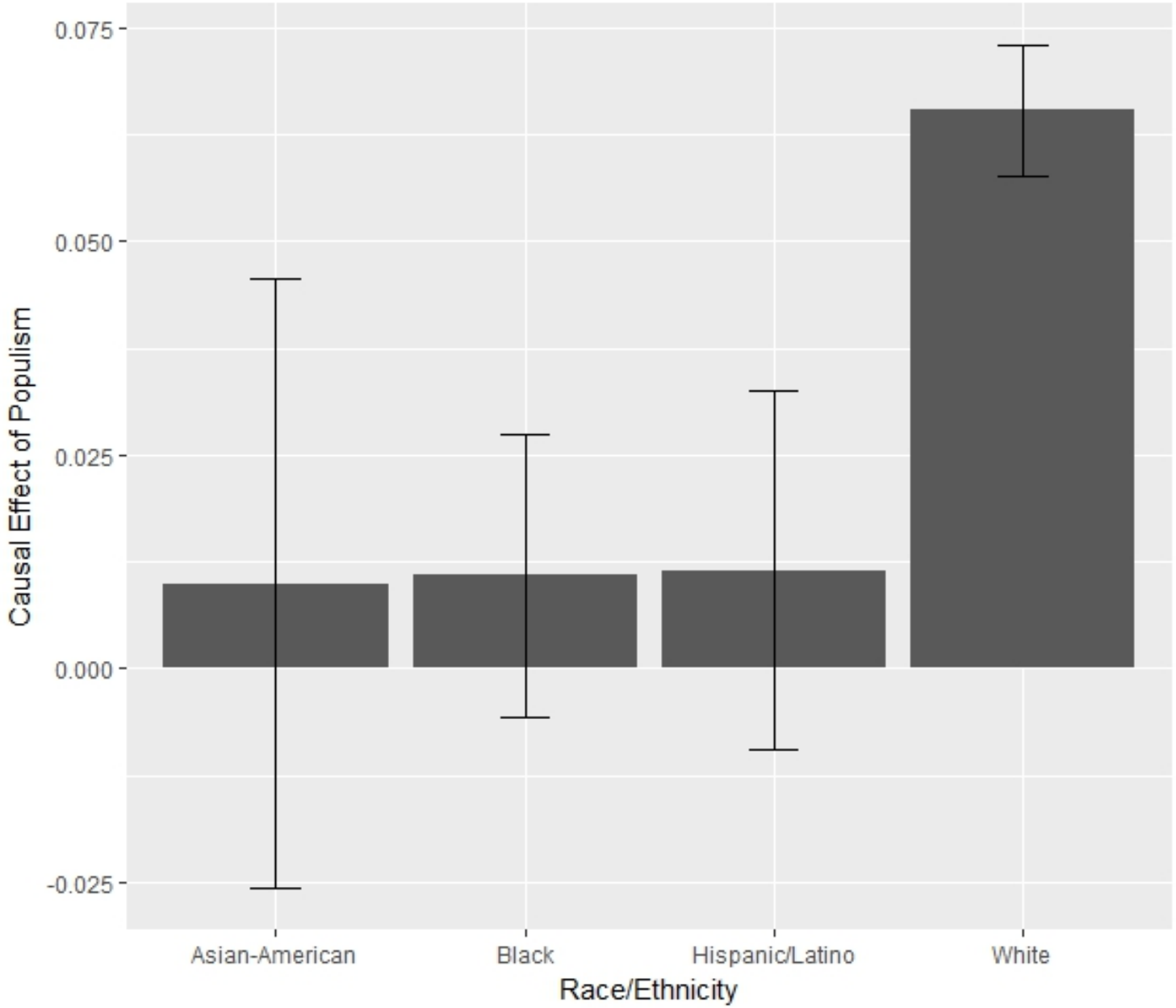
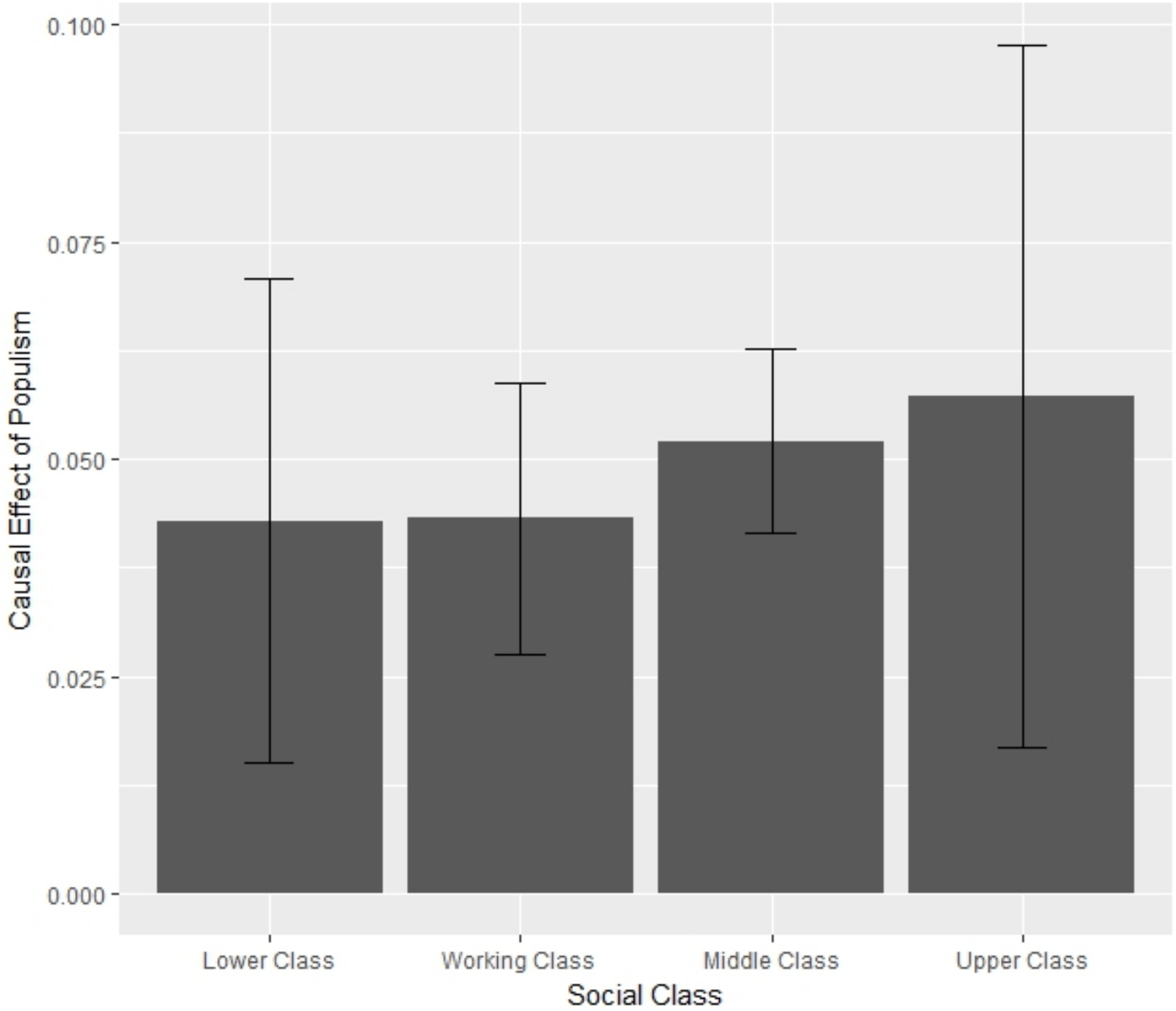
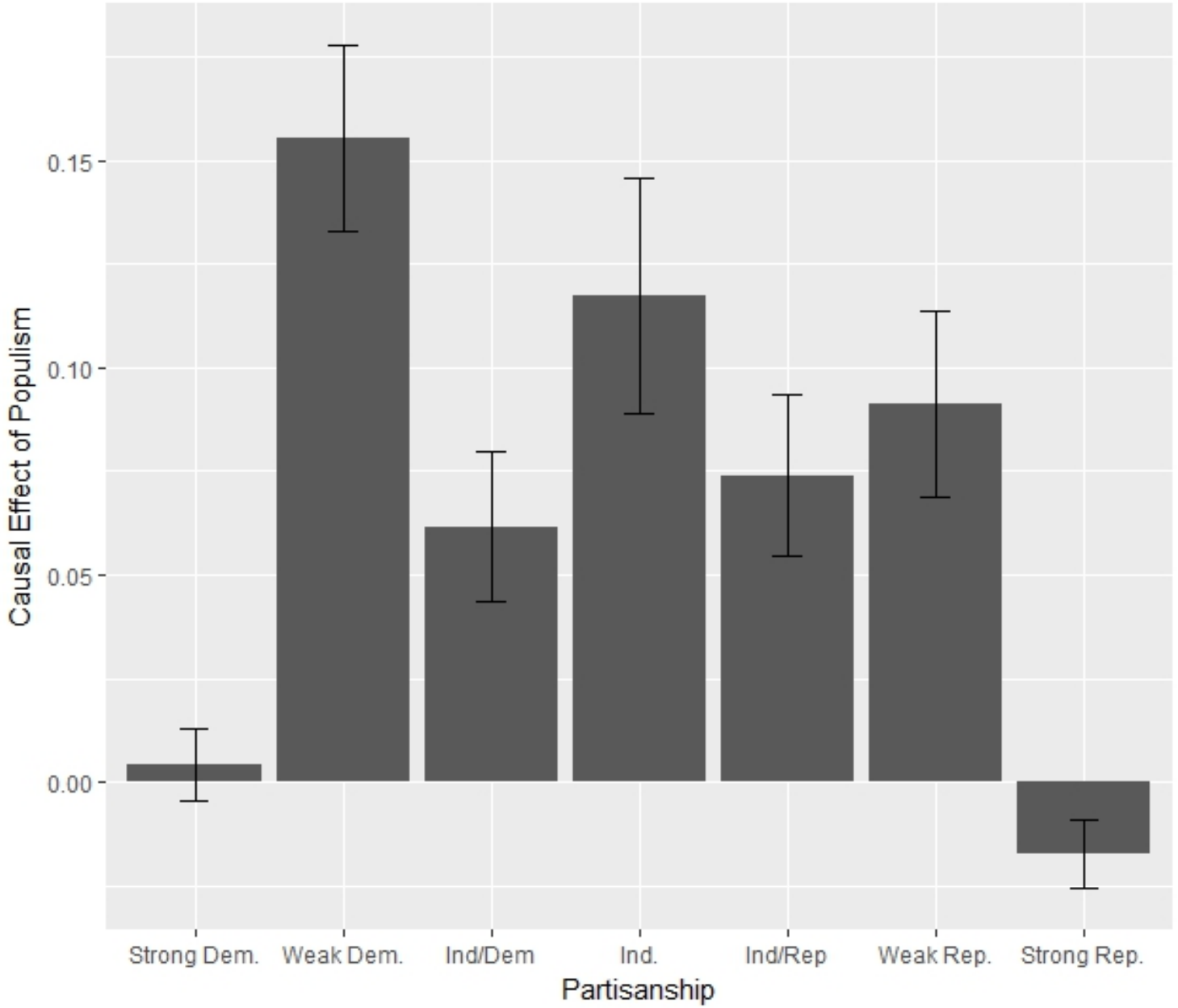
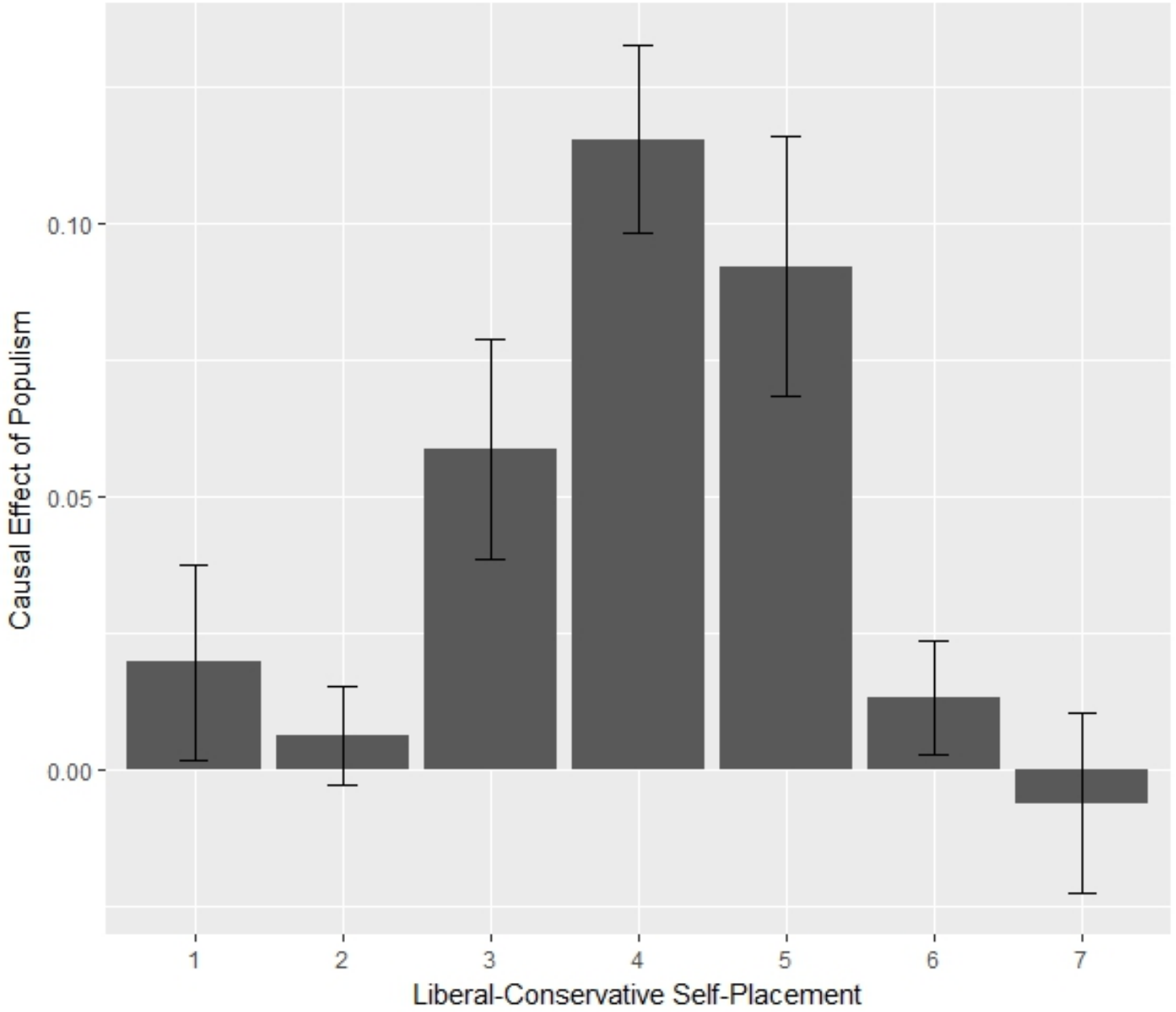
"Most politicians do not care about the people."


0.12
0.09
0.06
0.03
0.00
Causal Effect of Populism
None
Demographics
+ Identity
+ Attitudes
+ Evaluations
Set of Control Variables


0.075
0.050
0.025
0.000
-0.025
Causal Effect of Populism
Asian-American
Black
Hispanic/Latino
White
Race/Ethnicity


0.100
0.075
0.050
0.025
0.000
Causal Effect of Populism
Lower Class
Working Class
Middle Class
Upper Class
Social Class


Causal Effect of Populism
0.15
0.10
0.05
0.00
Strong Dem.
Weak Dem.
Ind/Dem
Ind.
Ind/Rep
Weak Rep.
Strong Rep.
Partisanship


Causal Effect of Populism
0.10
0.05
0.00
1
2
3
4
5
6
7
Liberal-Conservative Self-Placement