

Information Exposure and Belief Manipulation in Survey Experiments

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Prepared for IPES 2023

October 28, 2023

Factual information & political attitudes/behavior

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 - Does perception of relative gain for the US from a trade deal influence support for that deal?

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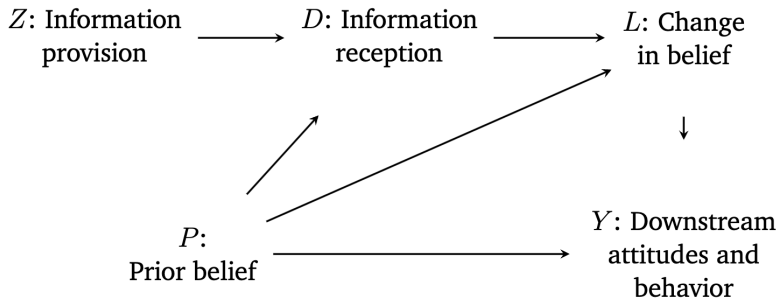
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- Random assignment of information about the US's relative gain from the trade deal
- Difference in average support for the trade deal between the treated and control groups
- Difference is interpreted as resulting from changes in perceptions of the US's relative gain from the deal

Theory being tested



The disconnect

- Treatment effect of theoretical interest
 - Effect of change in perception/belief about some aspect of the world on downstream attitudes and behavior

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- What is actually being manipulated
 - The availability of some information embedded in the survey
- The effect of the *intent* to instill a piece of information in individuals and/or change their beliefs
 - Might not be successful

Two levels of the disconnect

In survey experiments, the treatment effect of providing information can mask varying degrees of movement on two levels:

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Category	Count	Percentage
No mention of Manipulation Checks	43	64.2%
Treatment-relevant (TR) MC	9	13.4%
Any MC (excl. TRMC)	15	22.4%
Total	67	100%

- Passing rates for TRMC range from 29% to 92%

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2. Lack or unknown extent of belief change

Accounting for noncompliance and differential belief change

- We could use an instrumental-variable approach

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- IV assumptions: Random assignment, stable unit treatment value, instrument relevance, monotonicity, and exclusion restriction.
- Placebo test: Is the experiment an apt test of theory?

- **Application 1:** Re-analysis of three experiments replicated in BKRTW (2022)
 - Nuclear Weapons (Press et al. 2013): Perception of military utility and support for use
 - Elite Messaging (Nicholson 2012): Perception of partisan identity of politician and support for immigration policy
 - Ingroup Favoritism in Trade (Mutz and Kim 2017): Perception of relative gain for US and support for trade deal

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Re-analysis of Ingroup Favoritism in Trade : Placebo test

- BKRTW's replication of Mutz and Kim (2017)
 - Manipulation of theoretical interest: perception of relative gain for US from trade deal
 - Downstream outcome of interest: support for trade deal

Re-analysis of Ingroup Favoritism in Trade : Placebo test

- Use results from manipulation checks

Think back to the trade policy that was described to you earlier in the survey. Will our trading partner benefit more than the US, will the US benefit more than the trading partner, or will they be impacted equally?

- The trading partner will benefit more than the US
- The US will benefit more than trading
- Both countries will benefit equally

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- Placebo test
 - Evaluate the ITT effect for those who failed to recall the theoretically relevant aspect of the treatment
 - If effect is nonzero: violation of exclusion restriction; interpretation of theory might not be valid

Re-analysis of Ingroup Favoritism in Trade : Placebo test

- BKRTW's coding of treatment assignment

Treatment arm	Varying info
Baseline	US gains 10 jobs, other country gains 1,000
Baseline	US gains 10 jobs, other country loses 1,000
Treatment	US gains 1,000 jobs, other country gains 10

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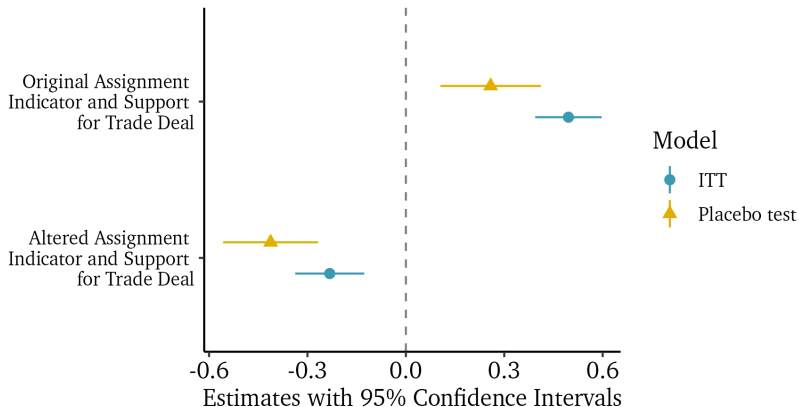
- Our coding of treatment assignment

Treatment arm	Varying info
Baseline	US gains 10 jobs, other country gains 1,000
Treatment	US gains 10 jobs, other country loses 1,000
Treatment	US gains 1,000 jobs, other country gains 10

- Expected sign of treatment effect is positive according to theory

Re-analysis of Ingroup Favoritism in Trade: Placebo test

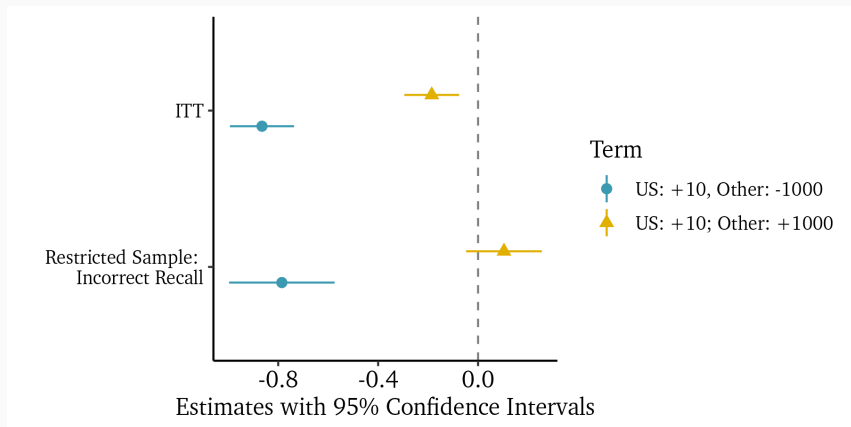
Binary coding



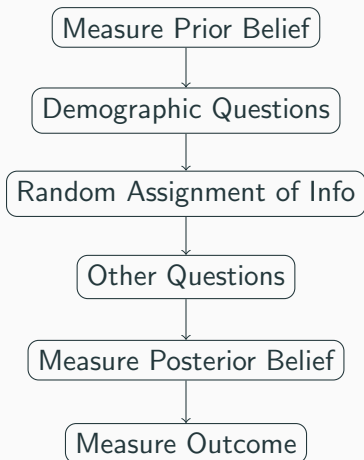
Re-analysis of Ingroup Favoritism in Trade: Placebo test

Factorial coding

Baseline: US: +1000, Other: +10



Incorporating measures of belief: Brief overview



Recommended decision flow

if Looking for most effective intervention

Use adaptive design

Estimate ITT

else

if Effect of information reception is of interest

Use treatment-relevant manipulation checks

Use placebo test to assess exclusion restriction

Use IV analysis to obtain effect of information exposure

if Effect of belief change is of interest

if Nuisance beliefs are downstream

Use IV analysis to retrieve effect of belief change

if Not all nuisance beliefs are downstream

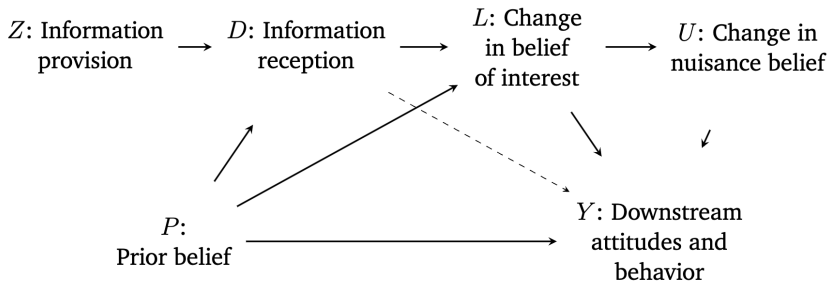
IV + sensitivity analysis

Thanks!

The exclusion restriction

- Exclusion restriction: Instrument affects outcome *only via the instrument*.
- Exclusion restriction satisfied under certain theories of belief change.
- When violated, e.g., when instrument affects those failing manipulation check: IV design is invalid but ITT is also hard to interpret.
 - Unclear what we should learn from the ITT estimate
 - **Sensitivity analysis** might be needed.

Example of violation: Concern about nuisance beliefs



Re-analysis of two other experiments

- **Nuclear Weapons (Press et al. 2013)**
 - Information being manipulated: relative military utility of nuclear vs. conventional strikes
 - Downstream outcome of interest: support for use
- **Elite Messaging (Nicholson 2012)**
 - Information being manipulated: partisan identity of a fictional politician that endorses an immigration policy
 - Downstream outcome of interest: support for immigration policy

Re-analysis of two other experiments

- Treatment recall rates by treatment status and study

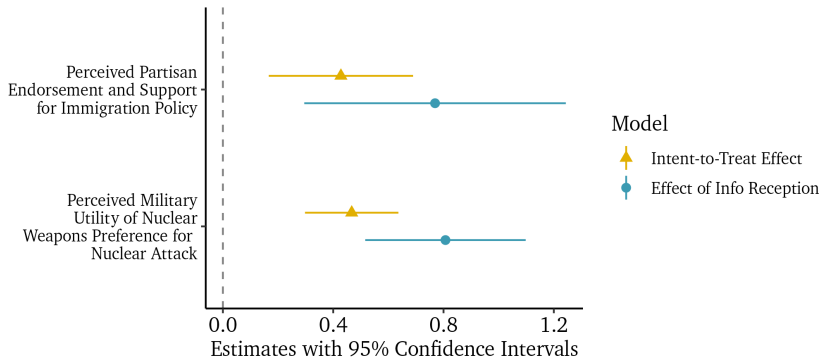
Study	Treatment Status	Recall Rate
Nuclear Weapons	0	0.56
	1	0.58
Elite Messaging	0	0.71
	1	0.62

Re-analysis of two other experiments

- Recode treatment indicator and manipulation check to get info reception

Treatment Status	Correct Recall	Information Reception
0	0	0
0	1	0
1	0	0
1	1	1

Re-analysis of two other experiments



A survey experiment in Taiwan

Economic growth vs. democracy in Taiwan

- Republic of China (ROC) government moved to Taiwan after loss on the mainland to the Chinese Communist Party in the Chinese Civil War
- ROC democratized in the 1990s
- Unification-independence has been a central dividing issue in Taiwanese politics
 - The DPP is pro-independence, while the KMT is more pro-unification

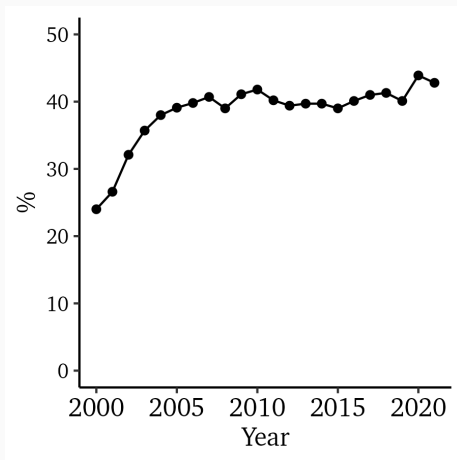
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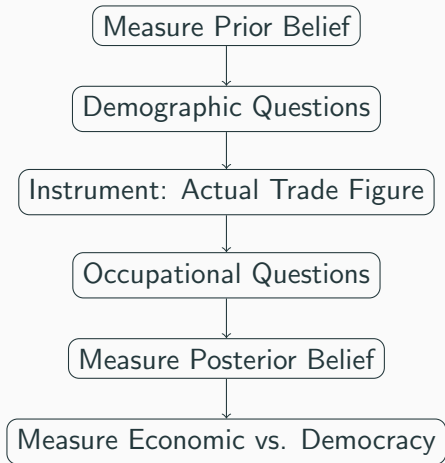
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- Unification-independence has been a central dividing issue in Taiwanese politics
 - The DPP is pro-independence, while the KMT is more pro-unification
- Economy and democracy are in tension given Taiwan's trade dependence on mainland China and incompatible sovereignty claims + political systems
 - Economically dependent on trade with the PRC, but politically wants to stay as an autonomous democracy

A survey experiment in Taiwan

Taiwan's trade dependence on China



A survey experiment in Taiwan

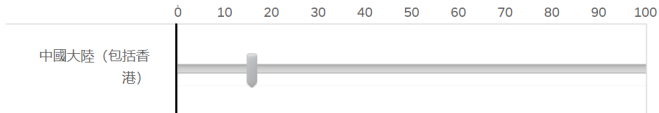


- Prior belief: Guess of Taiwan's export share to China, benchmarked against US.
- Instrument: True figures.
- Posterior belief: Sliders to guess exports to various regions.
- Outcome: Weighting of economic development vs. democracy.

A survey experiment in Taiwan

Design: Prior elicitation

2021年（民國110年）台灣銷往美國的出口貿易額大概佔台灣出口總額的**15%**。請問您認為2021年台灣的出口貿易額大概有多少個百分比銷往中國大陸（包括香港）？請使用滑桿來表示您認為最接近真實數值的猜測。



A survey experiment in Taiwan

Design: The instrument

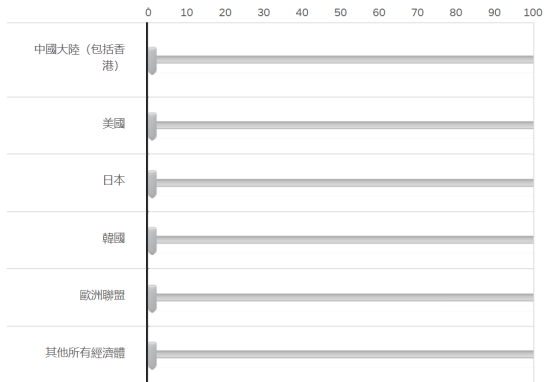
根據財政部估計，2021年（民國110年）台灣的出口總額中有**42%**（也就是大概四成）銷往中國大陸（含香港）。這比您之前猜測的數值高出 $\$e{\text{round}(42 / \text{q}://\text{QID126}/\text{ChoiceNumericEntryValue}/1 * 100 - 100, 1)}$ %, 比台灣2021年銷往美國出口總額則高出**180%**。

我知道了

A survey experiment in Taiwan

Design: Posterior elicitation

您認為2021年（民國110年）台灣的出口貿易當中，有多大的百分比去到下面的這些國家或地區？請使用滑桿來表示您認為最接近真實數值的猜測。總額應等於100。



A survey experiment in Taiwan

Design: The outcome

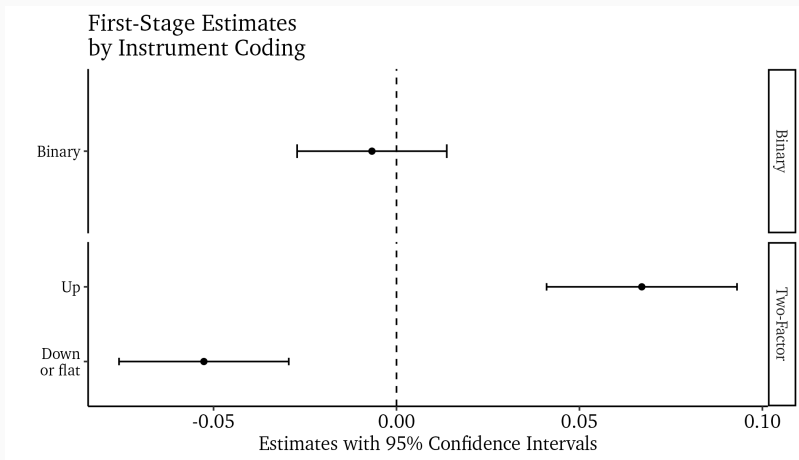
Between

1. sustained economic development and
2. free and fair elections,

some think the former is more important, while others think the latter is more important. Which do you think is more important for Taiwan?

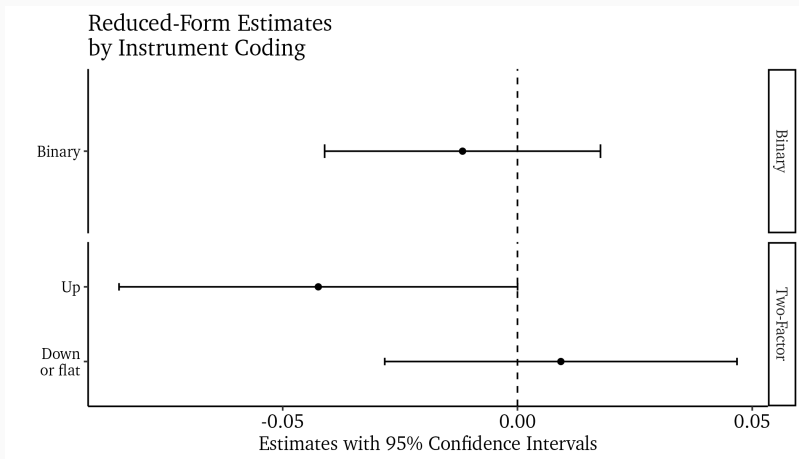
A survey experiment in Taiwan

Results: First-stage



A survey experiment in Taiwan

Results: Reduced-form



A survey experiment in Taiwan

Results: IV

