Pre-analysis plan for a conjoint experiment about trust in scientists

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Pre-analysis plan of a conjoint experiment conducted in Norway and in the U.S.

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1 Introduction

This experiment is a conjoint experiment conducted in Norway in the Norwegian Citizen Panel and in the U.S. with Mturk. The two studies are designed to study the effect of different attributes of scientists on people's trust in scientists.

I expect that confirmation bias will play an important role for whether respondents deem a scientist as more or less trustworthy. If the scientist's findings corresponds with the respondents attitudes on the topic, I expect people to evaluate the scientist as more trustworthy than when attitude and scientific findings does not correspond. I also expect party cues to play an important role, meaning that I expect respondents to trust scientists who supports parties they like, rather than dislike.

I run a conjoint experiment in order to test the relative effect of confirmation bias and party cues, and compare these factors to factors such as academic position, use of method and publication channel (i.e., as a report or in an internationally leading journal).

The underlying research questions are: 1) how does each of the factors predict trust and distrust in a scientist, and 2) what is the relative effects of each of factors?

I explore these research questions in two different countries. In the Norwegian study I restrict the topic to research on immigration consequences. In the American study I, in addition to the immigration topic, include climate change research as a topic.

2 The Norwegian Study

In the Norwegian version of the experiment I ask a probability based panel of about 1000 Norwegian citizens to evaluate the trustworthiness of two hypothetical scientists based on seven different factors. Respondents complete one choice task.

2.1 Data

The data for the Norwegian study is collected from a probability-based online national survey conducted by the Norwegian Citizen Panel (NCP). The experiment is fielded in June 2018. The data is available free of cost for scholars via the Norwegian Social Science Data Archive.

2.2 Design and measures

Following the design of a typical choice based design (see Hainmueller, Hopkins and Yamamoto, 2014; Knudsen and Johannesson, in press), the respondents are asked to make decisions between pairs of scientists. I show respondents a screen with profiles of two persons, with the following introduction: "Please read the description of these two persons carefully. Then, please indicate which of these two you believe would provide you with the most reliable information about immigration consequences for Norway". See Table 1 for an overview of the American version of the attribute list.

3 The U.S. American Study

3.1 Data

The survey will be fielded to about 1,000 respondents on Amazon's Mechanical Turk (Mturk). Eligibility to take the survey will be restricted to U.S.-based MTurk Workers. Each respondent will evaluate three choice tasks related to this study. The respondents are randomly assigned to either (a) three choice task related to immigration research or (b) three choice tasks related to climate change research. The study is fielded in June 2018.

3.2 Design and measures

The design and measures are equal to the Norwegian study with some extra attribute values within the attributes, and with the topic of climate change in addition to the immigration topic. See Table 1 for an overview of the attributes in the version about immigration research.

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Table 1: List of attributes in the conjoint experiment about immigration research

Treatment attribute	Value
The person's most recent scientific article finds that immigration	"is an advantage for America", "is neither an advantage nor a disadvantage for America ", "is a disadvantage for America"
Current academic position	"Professor", "PhD Candidate", "Independent researcher without a PhD degree".
Salience in the media	"Never contributes as an expert in the media", "Seldom contributes as an expert in the media", "Often contributes as an expert in the media".
Gender	"Male", "Female"
Political standpoint	"Republican", "Not known", "Democrat"
The person's most recent scientific article is published	"in an internationally leading scientific journal", "in a national scientific journal", "as an unpublished report"
The person's most recent scientific article use	"Statistics", "Qualitative interviews", "Survey method", "Experiments", "Focus groups"

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I will adopt the statistical approach developed by Hainmueller, Hopkins and Yamamoto (2014), and estimate average marginal component effects (AMCEs). The AMCE will show the average difference in the probability of a scientist being more or less trusted than other scientists. Each attribute level is compared to a different attribute level within the same attribute. I will explore the relative effects of each attribute for each of the three experiments.

I will match the party shown in the attribute list with a variable that measure the degree respondents like or dislike that specific political party. I code the matched variable as "Like party", "Dislike the party", or "Party not shown". Thus, I can use the no-partisan condition as reference category, and compare this to the effects of partisan effects among fellow partisans and among respondents holding opposite political views.

Similarly, I will also match the attribute about the research finding (immigration: "The person's most recent scientific article finds that immigration" / climate change: "The person's most recent scientific article finds evidence that Americans should") with a variable measuring immigration and climate change attitudes.

I will also explore whether these results differ substantially and significantly among different age-groups, gender, education, ideology (republicans/democrats) and among those who trust/distrust the scientists and science.

References

Hainmueller, Jens, Daniel J Hopkins and Teppei Yamamoto. 2014. "Causal inference in conjoint analysis: Understanding multidimensional choices via stated preference experiments." *Political Analysis* 22(01):1–30.

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