Conjoint Measurement of Multidimensional Stereotypes

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Introduction

Conjoint experiment: respondents make several choices from sets of options described using multiple attributes with independently randomized values
(Hainmueller, Hopkins, and Yamamoto 2014)

Has been recently applied to study aggregate stereotypes
(Flores and Schachter 2018; Goggin, Henderson, and Theodoridis 2019)

My goal is to develop an individual-level measure of stereotypes based on a conjoint task

Strategy

Respondents are asked to classify profiles into target categories rather than to express preferences

When each respondent rates enough profiles, individual-level marginal component effects (MCEs) can be estimated

Individual-level MCEs measure cognitive linkages between the target category and respective attributes, i.e. stereotypes

Can be used in inferential analyses, such as regression, as individual-level measures of stereotypes

Benefits: enhanced realism, multiple dimensions, lower social desirability concerns

	Person 1	Person 2
Government benefits	None	Medicaid
Age	27	47
Police record	None	None
Occupation	Graphic designer	Waiter
Gender	Male	Female
Race/ethnicity	Asian	White

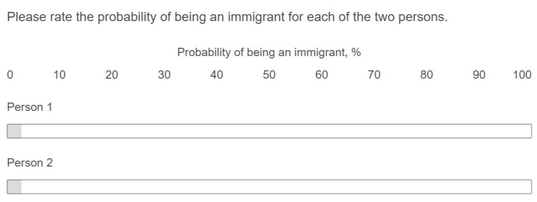

Figure 1. Example of a conjoint scenario

Data

Lucid platform, 1000 respondents

Each respondents rated 10 pairs of profiles (20 total) by likelihood of being an immigrant using a 100-point scale

Attributes: age, gender, occupational status, reliance on welfare, police record

All attributes dichotomized to estimate individual MCEs

Results

I started from estimating individual-level MCEs for all respondents

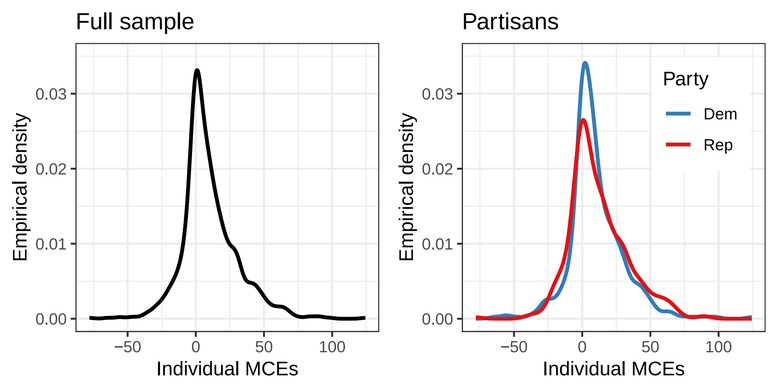

Figure 2. Distribution of MCEs for the attribute "Hispanic" (point estimates)

Individual MCEs are not true values but estimates based on a limited number of observations

To account for this uncertainty, I treat point estimates as means and squared standard errors as variances

Then, I make 100 draws from the corresponding normal distribution using them as multiple imputations in regression analysis
(Rubin 1987)

Table 1. Examples of uncertainty estimates

Attribute	Mean MCE	Mean SE
Hispanic	10.12	12.24
Low-skilled	4.99	8.69

Results (continued)

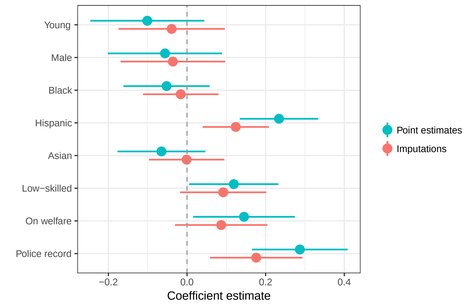

Figure 3. Effects of individual MCEs on anti-immigration attitudes

Accounting for uncertainty makes differences for some attributes

Race/ethnicity seems to matter more than skill: lower social desirability effects in conjoint measures?

Discussion

Individual-level MCEs can indeed be estimated but remain too uncertain even with 20 profiles rated

Still, even these uncertain estimates reveal some significant effects when used in regression analysis

Possible way to reduce uncertainty is hierarchical Bayesian approach
(Gelman and Hill 2007; Jackman 2009)

(So far, I tried estimating individual MCEs with `MCMCpack` and `rjags` but uncuccessfully)

References

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