Center for European Economics Research

Research Proposal Summer School Revealed Preferences

Revealed Preferences under Framing: Users valuation of privacy

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1 Introduction

Idea:

- Topic: Revealed preferences and privacy
- Advantage of this approach: connects RP and my field of Digital Econ
- Setting: GDPR introduced choice on cookies. Cookies choice depends on framing. This new model in the JPE can factor in framing. We can then derive people's revealed preference for privacy
- Data: Collect browsing behavoir from random sample. Requirement: Browser add-on. I can refer to the Paper from the conference.
- Model: From the JPE Paper, that's gonna be nice
- Intro: Science article, put it in general context of revealed preference research on privacy. If it doesn't exist yet, great (but unlikely). If it does already exist, I'd wager nobody so far has considered the effects of framing with this new model.
- Literature: Does this work? (Acquisti, Brandimarte, and Loewenstein 2015) And this? (Levy 2020)

Literatures touched: revealed preferences under framing, privacy evaluation, effects of GDPR. Previous literature suggests that there must be framing effects -¿ Madrian and Shea Lierature also belongs to how does the GDPR affect people and firms? Policy Implicactions: GDPR wants to privacy protect citizens. If design fails, implication is that all sites should default to only techn necessary What would ideal results look like?

Acquisti, Brandimarte, and Loewenstein 2015 mention online example even though they go through with the 401k plan example

2 Economic Model

The basline model is directly adapted from Acquisti, Brandimarte, and Loewenstein 2015.

A decision maker i chooses from a binary decision set $\mathbf{S} = \{0, 1\}$ und two possible frames $D_i \in \{0, 1\}$. We can adapt a notation that is akin to what many researchers prefer to use in a potential outcome setting. $Y_i(0)$ and $Y_i(0)$ denotes then the decision individual i makes under frame $D_i = 0$ and $D_i = 1$, respectively. Decision makers are assumed to have strict ordinal preferences over the set of available options. $Y_i^* \in \{0, 1\}$ denotes the most preferred option.

- Assumption A1 (Frame seperatbility) For all i, Y_i^* does not depend on D.

3 Data and Methods

What kind of data is required?

- Data needs to have an opt-in and an opt-out possible framing. This should be given in the cookie context:
  - What does the GDPR say exactly?
  - Either it says all cookies always must be disabled by default ...

– Or it varies only by how the website presents the choice. What are the options?

- I need to observe whether individual i chooses only the technically necessary cookies or all the cookies
- I also need to observe how the choice is presented:

A) Data Komplettes Deaktivieren der Cookies in Firefox oder Cookies deaktivieren für nutzungsbasierte Online-Werbung https://www.bild.de/wa/ll/bild-de/privater-modus-unangemeldet-54578900.bild.html

By using our site, you acknowledge that you have read and understand our Cookie Policy, Privacy Policy, and our Terms of Service https://tex.stackexchange.com/questions/823/remove-ugly-borders-around-clickable-cross-references-and-hyperlinks

I observe whether individual i accepts all cookies or only the technically necessary ones (Y_i), and whether the default is opt-in ($D_i = 0$) or opt-out ($D_i = 1$) at the date of visitng the website. Through an additional survey, we also observe age, sex and race for each employee.

B) Recovery of Consistent Preferences

- Under assumptions A1 - A4, proposition 1 allows us to identify the preferences of the consistent visitors
- A1) requires that the preferences over the cookie choice do not depend on opt-in or opt-out.
- A2) Frame exogeneity

Under A)1 to A4), we identify the preferences of the consistent decision makers. What you get is the preference of the consistent decision-makers.

C) Recovery of the Population Preferences

References

Acquisti, Alessandro, Laura Brandimarte, and George Loewenstein (2015). "Privacy and human behavior in the age of information". In: *Science* 347.6221, pp. 509–514.

Levy, Ro'ee (2020). *Social Media, News Consumption, and Polarization: Evidence from a Field Experiment*. https://www.roeelevy.com/research. [Online; accessed 09-July-2020].