Identifying Decision Subjects' Needs to Meaningfully Contest Algorithmic Decision-Making Processes

1 STUDY INFORMATION

1.1 Research Aims

Our aim is to explore paths for making algorithmic decision-making processes contestable. In order for decision subjects to be able to meaningfully contest algorithmic decision-making processes, they need procedural means to raise their voice and appropriate information to build arguments [5]. We aim to explore decision subjects' procedural and informational needs for them to feel empowered to contest aspects of algorithmic decision-making processes.

If helpful, please select the type of aim (non-exhaustive list)

Exploring.

1.2 Research question(s)

- **RQ:** What are decision subjects' procedural and informational needs to meaningfully contest algorithmic decision-making processes?

2 DESIGN PLAN

2.1 Study Design

Our study consists of semi-structured interviews with individuals who have a personal stake in the selected context [2] (i.e., participants with lived experience in housing rentals, see subsection 2.2). We explore the interplay between (a) contestation objects —*what* to contest—, (b) types of contestation processes, and (c) suitable information. We introduce participants to a hypothetical scenario where they get a warning from the municipality for *illegally* renting their house as holiday accommodation. We then ask them about what they would like to challenge in the algorithmic decision-making process, how they would challenge this and what information they would need to support this process.

2.2 Sampling and case selection strategy

Use case: https://algoritmeregister.amsterdam.nl/en/illegal-holiday-rental-housing-risk/ (last accessed 20.06.2023).

For the recruitment of participants for the interviews, we will use convenience sampling. We are specifically interested in capturing the needs of people who have lived experience with housing rentals. We expect varying levels of AI literacy to have an impact on the information needs expressed by participants [4, 6]. We will, therefore, start by creating a screening survey with questions about participants' AI background. We will post this survey in online housing channels. We will also put posters around ANONYMIZED and reach out to personal contacts. We will use the screening survey to select participants and ensure diversity in AI background.

Our research question requires to capture the experiences, understandings and perceptions of individuals around contestability and the information required to enable it. Following the recommendations by Clarke and Braun [2], we will need a moderate sample size (i.e., 10-20 participants for the interviews).

3 DATA COLLECTION

3.1 Data source(s) and data type(s)

The data we will generate consists of transcripts of the semi-structured interviews.

3.2 Data collection tools, instruments or plans

We will use the following tools for collecting the data: a screening survey and interview guide for running the semi-structured interviews. Several prompts have been designed for facilitating the interview. The interview protocol and the prompts have been pilot tested. For each interview question we have checked whether it helps us answer our research question, we have looked for problematic assumptions, and we have reflected on how meaningful participants would find it [2]. For each prompt we have checked the wording and layout of the presented artifcats. Based on the insights we got from the pilot test, we rephrased some of the items to make them more understandable for participants. We also modified the layout of the *Information Sheet* as a whole to make it more engaging and the explanation given for the individual decision to avoid saliency bias and halo effect [3]. The screening survey, the interview protocol and the prompts are attached to the pre-registration.

3.3 Stopping criteria

We will stop data collection when one of the following takes place:

- We conduct 20 interviews.
- Additional data fails to generate new information (i.e., saturation [2]).

4 ANALYSIS PLAN

4.1 Data analysis approach

Interview data will be analyzed using *reflexive thematic analysis* [1].

4.2 Data analysis process

Qualitative data will be analyzed following the following workflow:

- Transcribe audio recordings
- Translate the transcriptions (if the interview is conducted in a language other than English)
- Read the transcriptions and get familiar with the material
- Group quotes in codes and code groups (selective coding)
- Search for themes
- Review and map themes
- Refine codes

Data analysis will be led by the main researcher. The second and third researchers will partially code the data and review the results.

4.3 Credibility strategies

- Different researchers will analyse the data
- Reflexivity

Please provide a short rationale for why you selected particular strategies and how they are appropriate given your study's aim(s) and approach, or specify your credibility strategies if not on the above list.

Having different researchers analyze the data will help us ensure that the positionality of the main researcher does not skew the analysis. Reflexivity considers the effect that researchers' viewpoints have when reporting the phenomenon at hand.

5 MISCELLANEOUS

Reflection on your positionality

I (the principal researcher) am personally in favor of making algorithmic decision-making processes contestable. I have previously argued in favor of upholding ethical values in the design of algorithmic systems and of providing system level explanations to decision subjects to enable contestability that goes beyond appeal processes.

6 ADDITIONAL COMMENTS

As of submitting this preregistration, data collection has not yet begun.

REFERENCES

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[5] Henrietta Lyons, Eduardo Velloso, and Tim Miller. 2021. Conceptualising Contestability: Perspectives on Contesting Algorithmic Decisions. (2 2021). https://doi.org/10.1145/3449180

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