



PARTNERSHIP ON AI

# Participatory and Inclusive Demographic Data Guidelines

## Implementation Workbook

Use in conjunction with:

- [Guidelines](#)
- [Case Study](#)



# Introduction

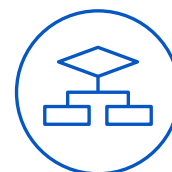
The following workbook is intended for use by organizations and teams implementing the [Participatory and Inclusive Demographic Data Guidelines](#) when collecting demographic data to support an algorithmic fairness assessment. The workbook is organized based on the *demographic data lifecycle phases*. We list the relevant *internal and external actors* who should be engaged in that particular phase, as well as a sample of *indicators* that organizations can use to measure their progress in implementing the Guidelines. For further guidance, please see our [Case Study](#) which provides a hypothetical example in which an AI-developing and deploying organization conducts a fairness assessment of its algorithmic system following the Participatory and Inclusive Demographic Data Guidelines.

To ensure the workbook is relevant to your purposes, check whether your organization or team meets all of the following specifications:

- ☐ My organization/team develops and/or deploys AI system(s).
- ☐ My organization/team plans to conduct a fairness assessment of our algorithmic/AI system.
- ☐ My organization/team plans to collect and analyze a dataset that contains demographic data for this fairness assessment.
- ☐ Some or all of this dataset will be collected from actual users, as opposed to synthetically generated.

We encourage organizations and teams to use these lists of relevant actors and indicators to guide who should be involved in implementing each demographic data lifecycle phase and to track their progress in implementing the Guidelines. Neither the relevant actors nor the indicators are comprehensive as they both, to some degree, depend on the specific context of an algorithmic fairness assessment. Instead, they are intended to provide a starting point for organizations to implement the Guidelines.

## 1 Planning & Design



The Planning & Design phase of the demographic data lifecycle involves identifying the intended outcomes, relevant stakeholders, and viable collection methods, and developing a project plan for the collection and usage of demographic data to support a fairness assessment.

### RELEVANT ACTORS: INTERNAL

- Developers / Machine Learning (ML) Engineers / Research Scientists
- User-Experience Researcher(s)
- Ethics / Responsible AI Team(s)
- Product Manager(s)
- Legal and/or Compliance Officer(s)
- Communication & Public Relations Manager(s)
- Inclusive Design Team(s)

### RELEVANT ACTORS: EXTERNAL

- [Sociotechnical](#) experts
- Academics focused on race, gender, immigration, disability, and other equity issues
- Leaders from community organizations that advocate for or work on behalf of relevant user population(s), e.g., racial justice organizers, gender equity advocates, immigrant rights activists, disability rights and/or disability justice advocates

### INDICATORS

- Number and diversity of sociotechnical experts, academics, and community organization leaders involved
- Quality of contributions proposed by sociotechnical experts, academics, and community organization leaders and/or number of changes made to the Planning & Design process based on feedback from sociotechnical experts, academics, and community organization leaders
  - *Use of Stakeholder Engagement Methods in the “Collaborate” or “Empower” categories*
- Number and diversity of data subjects and/or community groups engaged during the Planning & Design phase
- Number of contributions and inputs taken from data subjects and/or community groups during the Planning & Design phase

## 2 Consent



After designing the data collection process and identifying relevant stakeholders, data subjects must be provided with an opportunity to agree or disagree to provide their data for the purpose of a fairness assessment. Informed consent is relevant and may be required at multiple phases throughout the data lifecycle.

### RELEVANT ACTORS: INTERNAL

- Developers / ML Engineers / Research Scientists
- User-Experience Researcher(s) and Designers
- Communication & Public Relations Manager(s)
- Product Manager(s)
- Legal and/or Compliance Officer(s)
- Ethics / Responsible AI Team(s)

### RELEVANT ACTORS: EXTERNAL

- Data subjects interacting with the algorithmic system
- Leaders from community organizations that advocate for or work on behalf of user population(s)
- Contracted third-party vendors assisting in the fairness assessment (if applicable)

### INDICATORS

- Level of parity in opt-in/opt-out rates across demographic groups
- Accessibility and clarity of consent processes (measured via a questionnaire, focus groups, or select interviews)

### 3 Collection



Data collection can begin after consent is obtained. This involves gathering data from external sources through the method(s) of choice, such as through public crowdsourcing, private sourcing, or automated data collection techniques.

#### RELEVANT ACTORS: INTERNAL

- User-Experience Researcher(s)
- Product Manager(s)
- Developers / ML Engineers / Research Scientists
- Data Security Officers
- Legal and/or Compliance Officers

#### RELEVANT ACTORS: EXTERNAL

- Experts trained in interviews, surveys, and other qualitative research methods
- Data subjects who consent to participate in the data collection process
- Contracted third-party vendors assisting in data collection (if applicable)

#### INDICATORS

- Confidence in sample representation
- Efficacy of privacy techniques against privacy risks and attacks
- Number and accessibility of opportunities for data subjects to provide open-ended input on collection methods
  - *Number of instances when input was integrated into collection methods*

## 4 Pre-Processing



The data collected must be cleaned and prepared to become usable for the type of fairness assessment being deployed. Data may be annotated, reformatted, summarized, or otherwise standardized in this phase.

### RELEVANT ACTORS: INTERNAL

- Product Manager(s)
- Developers / ML Engineers / Research Scientists
- Ethics / Responsibility Team(s)
- Data Security Officers

### RELEVANT ACTORS: EXTERNAL

- Contracted third-party vendors assisting in the fairness assessment (if applicable)
- Sociotechnical experts
- Leaders from community organizations that advocate for or work on behalf of relevant user population(s), e.g., racial justice organizers, gender equity advocates, immigrant rights activists, disability rights and/or disability justice advocates

### INDICATORS

- Utility of dataset after pre-processing techniques are applied, measured across demographic groups
  - *Number of demographic groups or subgroups dropped during processing due to an inadequate sample size*
- If annotation is required, the proportion of data annotators who have familiarity with the cultural contexts relevant to the algorithmic fairness assessment and demographic data process
  - *Number of data annotators provided with just compensation and working conditions (aligned with practices described in Partnership on AI's [Responsible Sourcing of Data Enrichment Services](#))*

## 5 Analysis



Next, this data is used to support the execution of a fairness assessment of the AI system in question. The type of assessment depends on the operational definition(s) of fairness, which [can include](#) demographic parity, predictive parity, or equalized odds, among others.

### RELEVANT ACTORS: INTERNAL

- Developers / ML Engineers / Research Scientists
- User-Experience Researcher(s)
- Product Manager(s)
- Inclusive Design Team(s)
- Data Scientists
- Communication & Public Relations Manager(s)

### RELEVANT ACTORS: EXTERNAL

- Leaders from community organizations that advocate for or work on behalf of relevant user population(s), e.g., racial justice organizers, gender equity advocates, immigrant rights activists, disability rights and/or disability justice advocates
- Academics focused on race, gender, immigration, disability, and other equity issues
- Sociotechnical experts

### INDICATORS

- Quality of method used to analyze bias (measured via expert assessment)
- Breadth and depth of external stakeholder engagement during the analysis process (measured by the number of touch points with stakeholders, number of instances in which stakeholder input is integrated, etc.)
- Level of alignment between the originally planned fairness analysis and completed fairness analysis
- Level of actionability of analysis findings

## 6 Bias Mitigation & Results-Sharing



Once the fairness analysis is completed, an organization can identify the appropriate path to an appropriate fairness intervention, if necessary. The results of this fairness assessment and subsequent interventions should also be shared with relevant stakeholders.

### RELEVANT ACTORS: INTERNAL

- User-Experience Researcher(s)
- Product Manager(s)
- Developers / ML Engineers / Research Scientists
- Legal and/or Compliance Officer(s)
- Communication & Public Relations Manager(s)
- Company leadership

### RELEVANT ACTORS: EXTERNAL

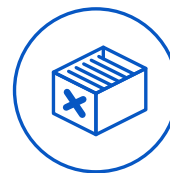
- Sociotechnical experts
- Leaders from community organizations that advocate for or work on behalf of relevant user population(s), e.g., racial justice organizers, gender equity advocates, immigrant rights activists, disability rights and/or disability justice advocates
- Data subjects who are impacted by the algorithmic system

### INDICATORS

- Effectiveness of actions taken in response to findings of bias (measured via additional statistical fairness assessment and interviews, focus groups, and surveys with data subjects)
- Number and accessibility of opportunities for data subjects to provide feedback
- Amount and quality of feedback gathered from data subjects regarding fairness interventions employed
  - *Number of instances in which feedback is integrated into current or future fairness interventions*



## 7 Removal, Archive, & Destruction



Once the data has been used to support a fairness assessment, it may be stored for future use, removed from active environments, or destroyed securely, depending on the terms of consent obtained from the data subjects.

### RELEVANT ACTORS: INTERNAL

- Product Manager(s)
- Developers / ML Engineers / Research Scientists
- Data Security Officer(s)
- Legal and/or Compliance Officer(s)
- Data Scientists

### RELEVANT ACTORS: EXTERNAL

- Data subjects and impacted communities

### INDICATORS

- Completion of removal of the dataset from all active environments
- Completion of dataset destruction (across the original dataset and all copies)
- Level of alignment between data removal/archival/destruction steps communicated in the Consent phase and steps taken

## 8 Documentation & Data Governance



Data must be safely stored and managed throughout each phase of a fairness assessment's data lifecycle. The appropriate storage type may differ depending on the dataset, given its particular security vulnerabilities. All decisions at each lifecycle phase must also be documented to ensure replicability and transparency.

### RELEVANT ACTORS: INTERNAL

- User-Experience Researcher(s)
- Product Manager(s)
- Developers / ML Engineers / Research Scientists
- Legal and/or Compliance Officer(s)
- Company leadership
- Data Security Officer(s)
- Any parties possessing a partial or complete copy of the dataset

### RELEVANT ACTORS: EXTERNAL

- Any parties possessing a partial or complete copy of the dataset

### INDICATORS

- Number and quality of privacy-preserving techniques used throughout the demographic data lifecycle
- Number of PAI [Documentation Guidelines](#) employed
- Extensiveness, clarity, and repeatability of documentation (assessed by data practitioners not involved in the project and data subjects involved in the project via surveys, focus groups, and interviews)