Data Justice in Practice:
A Guide for Impacted Communities

GPAI | THE GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE

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This report was developed by Experts and Specialists involved in the Global Partnership on Artificial Intelligence's project on Data Justice. The report reflects the personal opinions of the GPAI Experts and Specialists involved and does not necessarily reflect the views of the Experts' organisations, GPAI, or GPAI Members. GPAI is a separate entity from the OECD and accordingly, the opinions expressed and arguments employed therein do not reflect the views of the OECD or its Members.

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Co-Leads:
Alison Gilwald*, Research ICT Africa
Dewey Murdick*,Georgetown University

Project Advisory Group:
Zumrut Muftuoglu**, Yildiz Technical University
PJ Narayanan*, International Institute of Technology
Jaco du Toit**, UNESCO
Teki Akuetteh*, Africa Digital Rights Hub

The report was written by: **David Leslie**‡,The Alan Turing Institute; **Michael Katell**‡, The Alan Turing Institute; **Mhairi Aitken**‡, The Alan Turing Institute; **Jatinder Singh**‡, The Alan Turing Institute; **Morgan Briggs**‡, The Alan Turing Institute; **Rosamund Powell**‡, The Alan Turing Institute; **Cami Rincon**‡, The Alan Turing Institute; **Antonella Maia Perini**‡, The Alan Turing Institute; **Smera Jayadeva**‡, The Alan Turing Institute; with the supervision of the following GPAI Experts: **Alison Gillwald***, Research ICT Africa; **Dewey Murdick***, Georgetown University; **Jeni Tennison***,Connected by Data; and **Maja Bogataj Jančič***, Intellectual Property Institute.

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* Expert of GPAI's Data Governance Working Group
** Observer at GPAI's Data Governance Working Group
† Invited Specialist
‡ Contracted parties by the CEIMIA

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Introduction

The Advancing Data Justice Research and Practice project aims to broaden understanding of the social, historical, cultural, political, and economic forces that contribute to discrimination and inequity in contemporary ecologies of data collection, governance, and use. In this guide for impacted communities, we offer practical guidance to support communities to engage with data justice in relation to data, technologies, and digital infrastructures in their communities. As discussed in our Integrated Literature Review and Annotated Bibliography, the nascent field of data justice has, in its brief existence, done important work to illuminate how historically rooted conditions of power asymmetry, inequality, discrimination, and exploitation are drawn into processes of data production, extraction, and use. The Advancing Data Justice Research and Practice project offers conceptual framing and guidance to expand this area of scholarship and practice.

What's in this Guide

This guide provides actionable information for communities who wish to implement the principles and priorities of data justice. In this section we present the process undertaken to produce this guide, the intended audience, and the context of the Advancing Data Justice Research and Practice project. To support both readers who do not have a technical background or feel the need to enrich it, we then discuss the key concepts of data and artificial intelligence. This section answers questions about what data is, its different types and uses in AI or machine learning modelling, additional key data concepts, and the stages of the AI lifecycle. In the following section, we tell the story of the nascent field of data justice, from its early discussions to more recent intentions to relocate our understanding of what data justice means. This section includes an account of the outreach we conducted with stakeholders throughout the world in developing a nuanced and pluralistic conception of data justice and concludes with a description of the six pillars of data justice around which this guidance revolves. We then set out some of the ways in which communities might engage with data justice in relation to past, present and future community life. Following this section, we exemplify how these six pillars of data justice are being put into practice by organisations across the world conducting data justice and data justice adjacent work.

Depending on their contexts, potential impacts, and scale, data activities may be carried out in a way that involves stakeholder engagement. To facilitate this process, the next section provides an explainer of the Stakeholder Engagement Process and the steps it includes—preliminary horizon scanning, policy scoping and stakeholder analysis, positionality reflection, and establishing stakeholder engagement objectives and methods. This section sets out considerations relating to internal community engagement (i.e. engagement within your community) as well as approaches to engaging external stakeholders (i.e. to inform or influence external activities). Additionally, it sets out considerations to be addressed when participating in externally-led engagement processes (e.g. where communities are invited to participate in stakeholder engagement initiated by developers or policy-makers). Finally, the last section presents the guiding questions that will help communities to address issues of data, digital infrastructures, and affected areas of civic, public, and private life, in relation to past, present and future dimensions of community life and in accordance with the six pillars of data justice.

There are four Annexes in this document. The first Annex outlines 12 Principles and Priorities of responsible innovation to provide members of impacted communities who are critically engaging with data projects, data policies, or an issues related to the effects of data collection and use on them with a means of accessing and understanding some of the existing human rights, fundamental freedoms, and value priorities that could be impacted by those projects, policies, or issues. This table draws on various charters, declarations, and conventions to help spur critical reflection on which salient rights, freedoms, and values could be affected by your project. The second Annex provides, for your reference, the list of Sustainable Development Goals (SDGs), as equitable implementation of community-impacting data systems that furthers data justice should also serve to forward the SDGs (a set of general prompts about this is included in the Guiding Questions). The third Annex covers some of the insights we have gained about this project and the data justice pillars from the excellent reports that have been prepared by our Policy Pilot Partners. We have also included, as the fourth Annex, the positionality statement prepared by the Advancing Data Justice Research and Practice team as we started on our journey in this project.

How was this Guide produced?

This guide is the result of the research outputs of the Advancing Data Justice Research and Practice project and was produced with input from our Advisory Board, our 12 Policy Pilot Partners, and various other experts and partners at GPAI, CEIMIA, and around the globe. It was first published in March 2022 as a consultation draft. Using decidim digital interface, we enabled a platform through which readers could answer a survey about the usability, accessibility, and actionability of the guide and send their proposals on ways to improve the content and presentation of the guide. The content hereby presented integrate the feedback received during the consultation period, which took place between March and May 2022.

Intended Audience

This guide is designed for communities who are, or may be, impacted by data projects, data-enabled technologies, or digital infrastructures. It aims to equip communities with an understanding of data justice in order to enable them to scrutinise and challenge harmful data practices and develop approaches which can realise equitable benefits of data for their communities. Herein you will find practical guidance, background, and conceptual framings for appreciating and addressing many of the complex issues presented by contemporary networked societies.

Project Context

Key Term: Community

The term community relates to a group of people with some shared characteristics. This might be a "community of place"—a group of people who live or work in the same geographic area—or a "community of interest", which brings together people through shared activities, identities, interests, or concerns. As such, while some communities are located in a particular place, others are geographically dispersed (i.e., where people who share activities, identities, interests, or concerns live in different places). It is also important to note that individuals typically belong to more than one community (e.g., someone might belong to a local community related to the place in which they live as well as communities formed around interests, identity characteristics, or hobbies). Moreover, communities are rarely homogeneous in their interests and experiences and so it is important to pay attention to power dynamics and inequalities within communities, noting that individual community members will have a range of experiences, interests, and perspectives.

The Advancing Data Justice Research and Practice project seeks to initiate a new wave of data justice scholarship and practice. We utilise a decolonial lens that embraces a plurality of perspectives and situated knowledge, aiming to move beyond Anglo-European framings and recognising how existing relations of power among and within the world's societies are not inevitable. While recent, the data justice movement, and the transformative practices that are described in this guide, draw from an extensive history of critical insights and the energies of adjacent social justice movements from around the world. The application of an enlarged, inclusive, and decolonial approach to data justice research and practice is essential as we turn to address the manifold risks, harms, and opportunities presented by planetary scale datafication.

Perspectives from the Field

Throughout these guides, our Policy Pilot Partners' 'Perspectives from the field' are highlighted. Each of these 'Perspectives from the field' will draw readers' attention to specific challenges facing communities around the globe, from migrants and refugees to indigenous communities and those working in the gig economy. Further insights into these challenges may be found in our Policy Pilot Partners' data justice reports.

Key Concepts: Data and Artificial Intelligence

In this section we explain some of the technical concepts discussed in this guide, including the components of artificial intelligence and the elements of a typical machine learning project lifecycle. We begin with a definition of 'data'.

What is data?

GPAI's Data Governance Working Group defines data used in a digital context as 'digital data', as often this term is what is usually meant when discussing data-driven innovation, especially in the context of AI.[1] Digital data can take many forms, but one way to frame digital data that is used by Standards organisations such as ISO 2015[2] is the 'representation of information'. Examples of digital data include information that has been represented in a digital form such as daily temperatures, prices, names of individuals involved in a project, cities across Asia, amongst many others. These examples serve to illustrate the diversity of data that is collected.

Rob Kitchin in The Data Revolution defines data as being either representative, implied, or derived in nature.[3] Representative data would take the form of measurement such as temperature or someone's height, implied could result from the absence of data, while derived involves combining other forms of existing data to produce new insights.

Figure 1: Visualising the scale and complexity of data sources

[1] GPAI Data Governance Working Group, 2020
[2] ISO, 2015
[3] Kitchin, 2014

There are many ways in which data has been defined over the last twenty years. Our Data Bodies, a research team concerned with the collection, sharing, and storage processes of communities' digital information, defines data as 'facts, details, statistics, or any information collected together for reference or analysis'.[4] The UN Statistical Commission and Economic Commission for Europe defines data as 'the physical representation of information in a manner suitable for communication, interpretation, or processing by human beings or by automatic means'.[5] Yet another definition comes from Emiliano Treré in the Data & Racial Capitalism podcast in which Treré defines data as 'material produced by a process of abstraction from the world…a kind of representation of forms that constitute the building blocks from which information and knowledge are created… Data do not exist but emerge through this process of abstraction. Something is taken from things and processes, something that wasn't previously there in this form before and then we process it and we make it data'.[6] Kitchin defines data as 'raw material produced by abstracting the world into categories, measures and other representational forms numbers, characters, symbols, images, sounds, electromagnetic waves, bits—that constitute the building blocks from which information and knowledge are created'.[7]

Figure 2: Confronting the social and ethical challenges of understanding data

Although these definitions are varied, they all centre on the notion that data both represents and abstracts information about the world, while acknowledging that data can take many forms and be used and collected in diverse ways. This is an important foundation to allow us to consider how these definitions of data are situated in the data justice landscape.

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[4] Lewis et al., 2018
[5] United Nations Statistical Commission and Economic Commission for Europe, 2000
[6] Kerby, 2021
[7] Kitchin, 2014

Different types of Data

As alluded to before, data can take many different forms. There are several distinctions about types of data, the first is quantitative versus qualitative data.

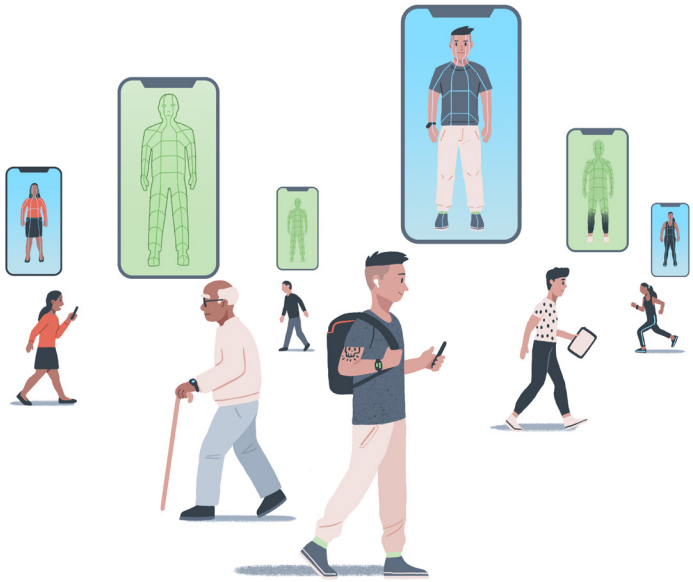


Figure 3: The omnipresence of measurement in an environment of smart connected devices

Qualitative data is descriptive data that is observed not measured. Examples of qualitative data include colours and names, while quantitative data is data that is measurable and able to be quantified such as exam scores or the length of objects.

The next distinction of data is structured, unstructured, and semi-structured. Structured data is specific to a purpose and organised with clearly defined categories. Often structured data is in the form of official statistics, organised survey results, or spreadsheets of administrative and operational data. Structured data can be queried, processed, and visualised in a straightforward manner. On the other hand, unstructured data is often general and varied data that has not been formatted with defined categories. Most of the data that exists in the world is unstructured and examples consist of collection of images and videos from the internet, audio and text data generated from digital communications, or readings from a sensor. Semi-structured data sits in between these two distinct types of data. Semi-structured data holds a loose structure with certain fields that could be used to organise it, but their structure is still irregular and inconsistent.

As one continues to differentiate between different types of data, a very important consideration which is especially important when thinking about data justice is personal data. It can include data that directly or indirectly identify an individual, such as name and surname, address, location data, and forms of identification (i.e., ID, passport), and that are specific to an individual's physical, physiological, genetic, mental, economic, cultural or social identity. Personal data are defined in Article 4 of the General Data Protection Regulation (GDPR)[8] and described in Recital 51[9] as being 'particularly sensitive in relation to fundamental rights and freedoms [and]

[8] European Union, 2016
[9] ICO, 2016

merit specific protection as the context of their processing could create significant risks to the fundamental rights and freedoms'. Therefore, those using personal data must proceed with significant caution. GDPR also defines 'special category personal data', data which is subject to extra protections and may require explicit consent. As outlined in Article 9, this includes 'personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation'.[10]

Using personal data presents many potential risks to the impacted individuals, not only from a data security and privacy perspective, but additionally from a human rights perspective as outlined in Recital 51.

Data used in AI or Machine Learning Modelling

Significant volumes of data are collected about individuals daily. While some of this data remains unused, especially as much of this data is unformatted and unstructured, large portions of data are used in modelling. The goal of modelling is often to feed in some form of input data to receive an output. Classic examples of modelling include 'classification, prediction, or recommendation'.[11] Classification is a process of assigning an object or person to a particular group. For example, does a particular animal belong to the group 'cats' or 'dogs'? Prediction is the process of using past data to predict a future action; for example, a prediction model could use your past purchases from a specific retailer to predict what you will buy on your next shopping trip. An example of recommendation would be a social media site using a recommender system to filter through all the posts of users that you follow and only show the ten posts that you are most likely to engage with.

For data to be used in modelling, a dataset which contains data useful for the problem set at hand must be obtained. Data can be collected through means such as surveys, polls, web-scraping tools, cookies on web-sites, along with many other means which we often are not aware of. The ways in which data is collected, processed, and used can have significant impacts on the outcome of the system whether it is assisting with the provision of social services or determining what videos you may want to watch based on your past viewing history. If data is only collected on certain groups or data is removed for units of data that are incomplete or missing, both could have significant impacts on the overall output of the model. To illustrate the point, we can use the example of facial recognition technologies which are trained to recognise faces of individuals. In an example illustrated by Joy Buolamwini and Timnit Gebru, a facial recognition classifier performed the worst on female faces with darker skin due to the underrepresentation of females with darker skin and individuals with darker skin in general in the datasets.[12]

[10] European Union, 2016
[11] ICO & ATI, 2020
[12] Buolamwini and Gebru, 2018

Figure 4: Data presents a range of issues relating to identity, equity, and knowledge

In the above example, due to the lack of representation of women and darker-skinned women in the dataset, the classifier was unable to recognise their faces leading to the reinforcement of historical patterns of discrimination towards these minority groups. In this instance, the dataset, often called the training set (a dataset used to train the model on past historical patterns) was unrepresentative and therefore led to harmful impacts. This is one example of data injustice that can occur in how the data is collected, processed, and used. Therefore, the ways in which this data is collected and the information it contains is critical and has real-world impacts on those for whom the outcome of the model is intended for.

Next, we will provide an introduction to various concepts related to the data innovation ecosystem.

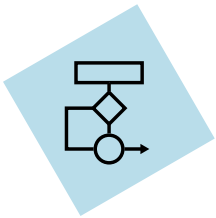
How do AI/ML systems work?

The following section defines key concepts that have to do with the AI/ML project lifecycle and the data innovation ecosystem. These concepts serve as a foundation for diving deeper into the sociotechnical considerations of each of the stages of the AI/ML lifecycle, which will allow for critical reflection around how to ensure data-driven technologies advance data justice.

Technical Concepts

PERSONAL DATA

Data that can be used to directly or indirectly identify an individual. Examples of personal data may include things such as first name and surname, address, location data, forms of identification (e.g., passport, national ID), and factors relating to someone's physical, physiological, genetic, mental, economic, cultural, or social identity.

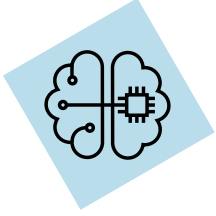


ALGORITHM

A computational process or set of rules that are performed to solve some problem. A computer is typically used to carry out complex algorithms, but a human could also follow an algorithmic process, such as by following a recipe or using a mathematical formula to solve an equation.

MACHINE LEARNING (ML)

A type of computing used to find patterns in data and to make predictions of an outcome for a particular instance. "Learning" is a bit misleading, as the computer does not learn in the same way as humans do. Instead, the computer is able to find similarities and differences in the data through the repetitious tuning of its parameters (often called "training") to build a model of that data. When the input data changes, the resulting model also changes accordingly, meaning the computer learns to detect new patterns. This is accomplished by applying a mathematical formula (typically, though not always) to large amounts of input data. The model that results can be used to make decisions, predictions, classifications, and so on.

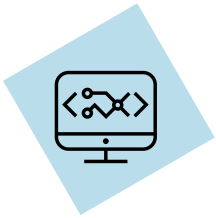


ARTIFICIAL INTELLIGENCE (AI)

There are many ways that AI has been defined over the last several decades, but for the purposes of this primer, we will stick to defining it by describing what it does, i.e. what role it plays in the human world: AI systems are algorithmic models that carry out cognitive or perceptual functions in the world that were previously reserved for thinking, judging, and reasoning human beings.

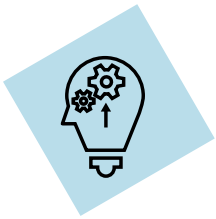
BIG DATA

Datasets that are voluminous, often require large amounts of storage, and contain vast amounts of quantitative data that can be used for revealing patterns or trends. Data contained within these large datasets can range in type (e.g., numbers, words, images) and be either specific to a purpose and tabular (structured) or general and varied (unstructured).



DATA SCIENCE

A field that includes elements from various disciplines including computer science, mathematics, statistics, and the social sciences, and is generally focused on extracting insights and patterns from datasets to answer or address a specific question or problem.



INTERPRETABILITY

If a human is able to identify how an AI or machine learning system came to some decision, or explain why it behaved in some way, then the system can be described as interpretable. Interpretability may also refer to the transparency of the processes by which the system was developed.

The graphic on this page adapted from the GPAI Data Governance Working Group and the OECD, demonstrates the data lifecycle more broadly, illustrating the points at which data is collected, input into the AI system and output in a way that leads to some form of action or recommendation. To illustrate one of these stages, we will focus on the arrow between 'Output data generated by AI' and 'Action or recommendation by AI'. The level of human involvement presents many possible issues for data justice. Are humans involved throughout the entire process to provide oversight to the creation of an AI system, or is there very little human involvement leading to an AI-driven decision-making process that negates the role of a human decision-maker? The in-between of these two phases can determine the severity of impacts on communities. Thus, considerations such as these are all incredibly important facets of the conversation surrounding advancing data justice research and practice.

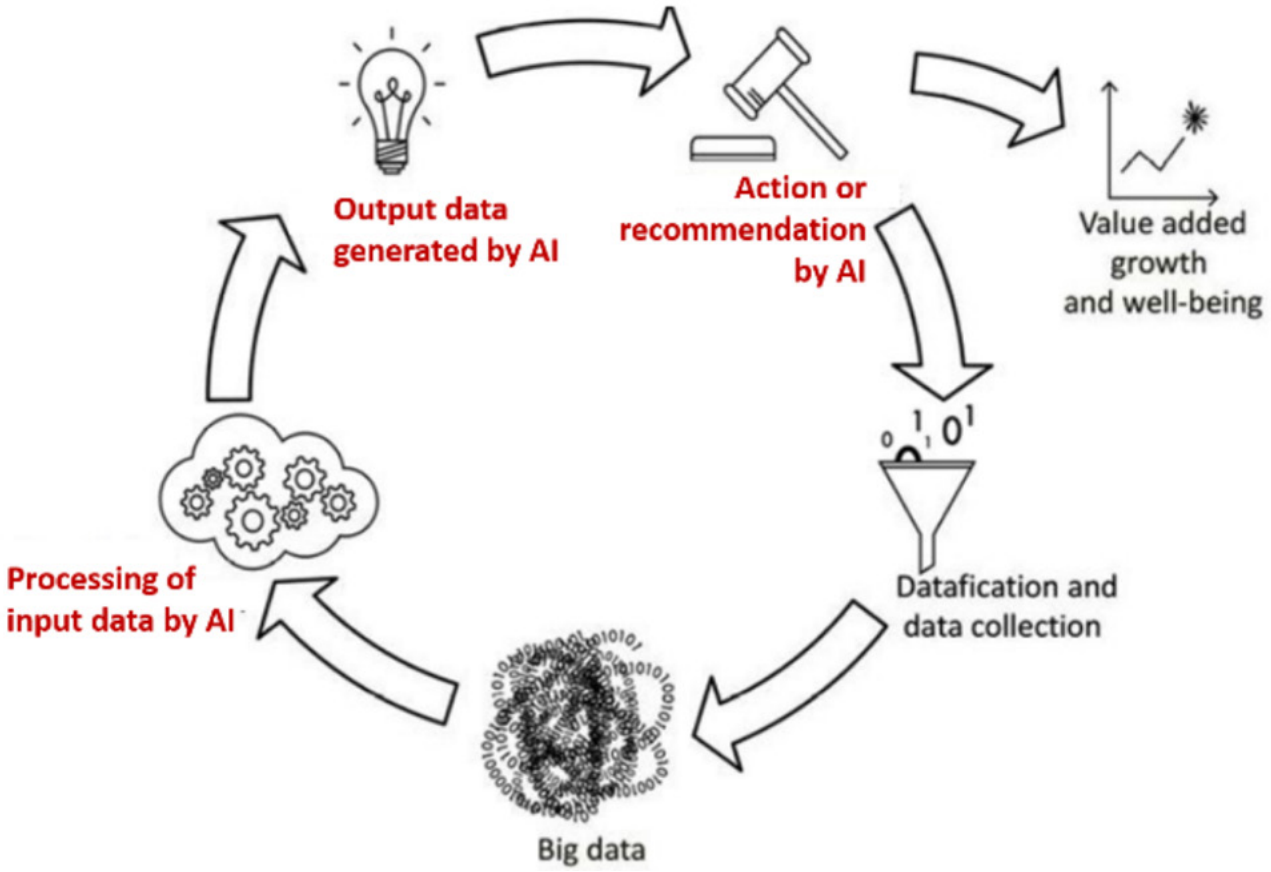


Image adapted from GPAI Working Group on Data Governance and OECD 2015[13]

The graphic on the next page demonstrates the stages of an AI/ML project lifecycle. As illustrated, there are many different phases that each carry their own set of considerations. The following three pages dive into greater detail about what each of the stages and sub-stages of design, development, and deployment are, while offering examples of the types of actions that can occur during each stage.

[13] GPAI Data Governance Working Group, 2020

Project Lifecycle

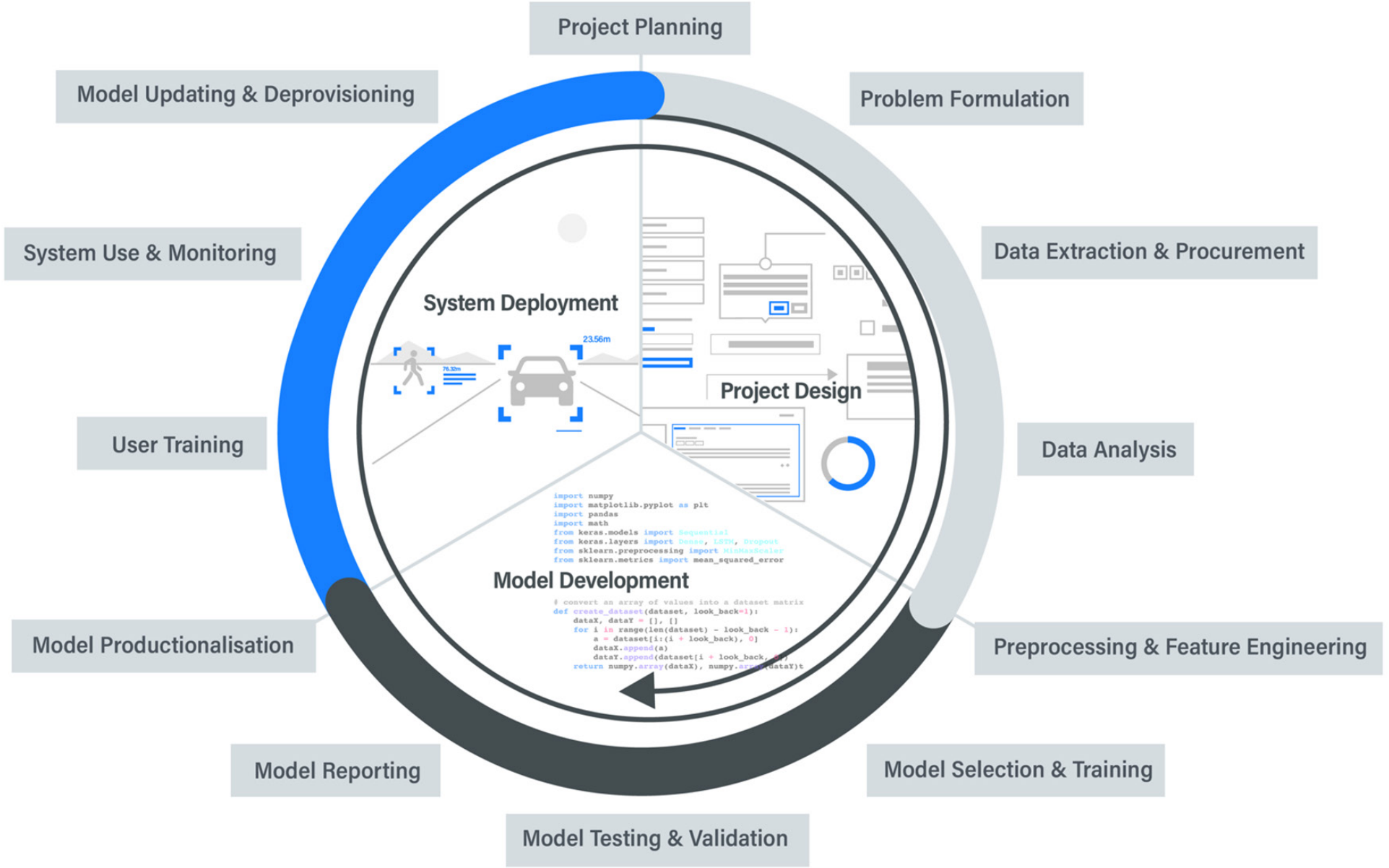


Figure 5: Depiction of the AI/ML lifecycle

Stages of the AI Lifecycle

DESIGN

Project Planning

A project team must decide what the project's goals are at the outset. Tasks in this stage may include stakeholder engagement activities, wider impact assessments, mapping of key stages within the project, or an assessment of resources and capabilities within the team or organisation. For example, an AI project team is deciding whether or not to use an AI application within an agricultural setting to predict which fields are likely to be arable over the next five years, and what the possible crop yield will be. This planning allows the project team to reflect on the ethical, socio-economic legal, and technical issues before investing any resources into developing the system.

Problem Formulation

A project team needs to determine what problem their model will address, along with deciding what input data is needed and for what purpose. The team should consider ethical and legal implications of the uses of data and provide a thorough account of intended and unintended consequences of use. For instance, the team has determined the overarching theme of the project will involve crop yields. This more precise formulation helps to identify a specific question that can be approached through data and ensure that the result will accord with ethical and legal considerations, such as biodiversity or land use.

Data Extraction or Procurement

This stage involves the processes by which data is gathered for the problem at hand. Data extraction may involve web scraping processes or data recording through surveys or similar methodologies, whereas procurement may involve legal agreements to obtain already existing datasets. In our running example, the team has decided their problem will involve determining factors important in predicting crop yields in a given agricultural season. They decide to request data from a government agency and farming co-ops, both of which require legal data sharing agreements.

Data Analysis

At this stage, the project team can begin to inspect the data. Primarily, this will entail a high degree of exploratory data analysis (EDA). EDA involves understanding the makeup of the data through visualisation and summary statistics. Some questions at this stage may include: is there missing data (incomplete data), outliers (unexpected data), unbalanced classes (imbalanced data), or correlation? For example, the team creates visualisations to understand things such as the distribution of crop types across farms, weather conditions, soil pH levels, along with understanding any missing data present.

DEVELOPMENT

Pre-Processing & Feature Engineering

The pre-processing stage is often the most time consuming part of the development phase of the AI lifecycle. Pre-processing includes tasks such as data cleaning (reformatting or removing incomplete information), and data wrangling (transforming data into a format conducive for modelling), amongst other processes that feed into the model training process. For example, during pre-processing, the members of the team notice that soil pH levels are treated as both numeric and text string data, which would cause issues when running the model, so they decide to make all of the soil pH levels the same data type by transforming the text string data into numeric data.

Model Selection & Training

Models should be selected to serve the problem determined in the design phase. Model types vary in complexity; however, model selection considers other factors such as data types, quantity, and availability. Models that lack sufficient complexity run the risk of underfitting (or failing to account for) the data. Preprocessed data is split into training and testing sets to avoid overfitting. Overfitting occurs when the model reflects the training data too closely and is unable to fit new, "unseen" data to make accurate predictions for inputs that were not in the training set. Training data are used to hone the parameters of the selected model. As an example of model selection, the project team has decided to employ a linear regression model to use past data to predict future crop yields. They wanted a model that was interpretable in order to fully explain the results, so choosing a simple technique like linear regression made sense.

Model Testing & Validation

After training, the model is then tuned and tested against "unseen" data. Validation sets are used to adjust higher-level aspects of the model (like hyperparameters that govern the way the model learns) and are often created by initially splitting the dataset into three parts, for instance, 60% training data , 20% testing data, and 20% validation data. During validation, elements of the model's architecture can be altered to affect model performance. For instance, the team runs the model and realises the number of variables included is causing overfitting. So, they decide to add a regularisation term (a method used to reduce the error of the model) in order to remove unimportant variables. The model is then tested on unfamiliar data to mimic real world application and to confirm performance and accuracy.

Model Reporting

After the team trains, validates, and tests the model, model evaluation (including a variety of performance measures and impact assessments), along with detailed information about the model workflow should be produced to better support transparent discussions about the model's output. For example, to complete the development phase, the team documents various performance metrics of their model, along with the processes to get to the current iteration of the model including preprocessing and the decision to add regularisation in the model testing and validation stage.

DEPLOYMENT

Model Productionalisation

The next stage of the AI lifecycle involves deploying the trained model in the real world. Effective implementation allows the model to be incorporated into a larger system. New data is processed by the implemented model to serve the intended purpose determined in the design phase. For instance, the AI project team has decided that the crop yield model is ready to be used. They choose to make it available to several farming co-ops and ask them to run it on their data to see if it provides useful insights.

User Training

Implementers of the system must be trained to understand the logic of the system, be able to explain its decisions in plain language to decision subjects, and use independent and unbiased judgement to gauge the quality, reliability, and fairness of its outputs. For example, after the team has trained specific users in the agricultural industry on how to use their model, these users will report back on whether they find the system to be useful, reliable, and accurate, amongst other metrics.

System Use & Monitoring

After the model is implemented by the team, it must be monitored to ensure that it is still serving the desired purpose, being used responsibly and within the intended scope, and is responsive to emergent, real-world conditions. For instance, the team notices that a new variable to measure water quality was released by a standards agency. This could cause a lack of standardisation across the data, as it was not an original variable included in the training data set. They decide to incorporate this change into the model to stay current with agriculture norms and practices.

Model Updating & Deprovisioning

Over time, the model may lose efficacy, requiring the supervising team to revisit earlier stages of the development phase including model selection and training. If more significant changes are required, the system may need to be deprovisioned, thereby restarting at the design process with project planning. For example, the team has had to retrain the model several times based on new variables and non-standardised data sets. They continue to monitor the model while considering alternative options, including the development of a new system.

Key Concepts: Data Justice

In this section we provide the reader with a portrayal of the emergent and evolving concept of data justice. We begin by describing the concept of data justice and present a brief history. We then expand on this concept with a set of "relocations" that shift our focus from exclusively Eurocentric framings and understandings of data justice to a more broadly inclusive concept. From there, we present six "pillars" of data justice that serve as the guiding priorities for this project, and which are informed by our efforts to connect with stakeholders from across the world.

What is data justice?

Before the advent of contemporary data justice research, prevailing approaches to data ethics and governance tended to frame issues surrounding the societal impacts of datafication and the increasing pervasiveness of data-intensive technologies in terms of data protection, individual rights, privacy, efficiency, and security.[14] They likewise tended to focus on building technical solutions to potential harms rather than on interrogating the social structures, human choices, and sociotechnical practices that lie behind the myriad predicaments arising out of an ever more "datafied society". The first wave of data justice scholarship sought to move beyond these limitations by situating the ethical challenges posed by datafication in the wider context of social justice concerns.

Key Term: Social Justice

Social justice is a commitment to the achievement of a society that is equitable, fair, and capable of confronting the root causes of injustice. In an equitable and fair society, all individuals are recognised as worthy of equal moral standing and are able to realise the full assemblage of fundamental rights, opportunities, and positions.

In a socially just world every person has access to the material means needed to participate fully in work life, social life, and creative life through the provision of proper education, adequate living and working conditions, general safety, social security, and other means of realising maximal health and well-being.

Social justice also entails the advancement of diversity and participatory parity and a pluralistically informed recognition of identity and cultural difference. Struggles for social justice typically include accounting for historical and structural injustice coupled to demands for reparations and other means of restoring rights, opportunities, and resources to those who have been denied them or otherwise harmed.

[14] **Dencik et al.**, 2016

Beginning in 2014, several distinct strands of data justice research emerged in Western scholarship based in the varying but distinct implications of datafication.[15] In 2017, these strands were brought together by Linnet Taylor to create a data justice framework with three core pillars (Figure 6 below). Through these three pillars, data justice came to be understood as a conceptual framework based on 'fairness in the way people are made visible, represented and treated as a result of their production of digital data'.[16] Taylor's work also calls for integrating elements of the 'capabilities approach' of social justice, borrowed from the work of Amartya Sen and Martha Nussbaum, which centres human flourishing and the creation of the material conditions necessary to enable people to realise their full potential and live freely.[17]

Taylor's Three Pillars of Data Justice

Visibility	Engagement with technology	Non-discrimination
Access to representation through data	Share in data's benefits	Ability to challenge bias
Informational privacy	Autonomy in technology choices	Preventing discrimination

Taylor, 2017

Since the publication of Taylor's 2017 data justice framework, the literature has expanded. Dedicated institutions including the Data Justice Lab at Cardiff University and the Global Data Justice Project at the Tilburg Institute for Law, Technology, and Society have been established.[18] The concept of data justice has been interrogated in a range of specific global contexts such as policing in Iran, activism in South Africa, indigenous agriculture in Africa, humanitarian work in post-earthquake Nepal, and more.[19] These academic understandings of data justice will continue to inform this work while additional perspectives, collected through our Policy Pilot Partners, our data justice survey, and our accompanying literature review broaden this definition even further.

[15] **Dencik et al.**, 2016; Heeks & Renken, 2016; Johnson, 2014
[16] Taylor, 2017, p. 1
[17] Nussbaum, 2006; Sen 1999; Taylor 2019
[18] https://datajusticelab.org; https://globaldatajustice.org
[19] Akbari, 2019; Cinnamon, 2019; Dagne, 2020; Kennedy et al., 2019; Kidd, 2019; Mulder, 2020; Punathambekar & Mohan, 2019

Data justice for refugees and migrants

Migrants and refugees are inherently vulnerable and precarious bodies, often occupying a liminal space within the imagination of body politic as well as the state.

Speaking from the experience of Pakistan, surveillance, datafication and exclusion of these bodies has been central to the nation-building process. Dealing with several waves of migrants, first after partition from British India and then the influx of migrant populations from newly independent Bangladesh provide good insight into the post-colonial national-building process. In the first wave it was integral to the nation that Muslims coming from across the newly-imposed Indian border be absorbed within the country, Pakistan Citizenship Act,1952 provides an expansive definition of who can claim to be a citizen. However, we see state practice change with the influx of migrants and displaced persons after the 1971 war, as Bihari migrants flowed in from Bangladesh. Many of these migrants still lack official citizenship and documentation despite having a strong claim of citizenship. Many of them are concentrated in informal settlements, with their families denied national identification to this day in 2022. They repeatedly face issues with registration into the National Database and Registration Authority (NADRA), unable to become data subjects in the eyes of the state.

The third wave of migration in the country has been refugees from across the border with Afghanistan in wake of the Soviet invasion in the 1980s and has continued with the rule of the Taliban and US invasion. These refugees have been systemically denied citizenship, even when next generations have laid claim to legal birth right citizenship. However the state has sought to look at these bodies from the prism of national security and surveillance--biometric Proof of Registration (PoR) cards are issued to refugees by NADRA. Despite being datafied, these bodies are still looked upon with suspicion--there are regular purging drives by NADRA to cancel registration of registration of documentation for refugees or anyone suspected of being Afghan. These bodies are coded as security risks, their informal settlements often razed to the ground on flimsy suspicions of crime -- always existing in that liminal space despite registration and datafication.

Shmyla Khan, Digital Rights Foundation

Timeline of Data Justice Literature

2014 to the present

Data Justice literature takes on increasingly globally oriented and intercultural approaches as authors explore local and contextual understandings of how social justice intersects with datafication.

2020 – Global Partnership on Artificial Intelligence (GPAI) is established. Its aim is 'to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities'. GPAI's 15 founding members are Australia, Canada, France, Germany, India, Italy, Japan, Mexico, New Zealand, the Republic of Korea, Singapore, Slovenia, the United Kingdom, the United States, and the European Union. They were joined by Brazil, the Netherlands, Poland, and Spain in December 2020.

Global Data Justice Project launched at Tilburg Institute for Law, Technology, and Society.

Linnet Taylor defines Data Justice as 'fairness in the way people are made visible, represented and treated as a result of their production of digital data'.

Data Justice Lab officially launched at Cardiff University's School for Journalism, Media, and Cultural Studies.

Dencik et al. propose that a data justice framework is needed to broaden the conversation around datafication to account for concerns beyond security, privacy, and data protection. They argue that the pursuit of data justice must include the involvement of activists and advocates in civil society.

Heeks and Renken propose that a framework of data justice is needed to account for local and global variations in how datafication impacts individuals and communities. While data justice needs to be applied differently in different contexts, human rights and fundamental freedoms are important guideposts. Heeks and Renken argue such a global approach is lacking.

World leaders adopt **17 Sustainable Development Goals** (SDGs) at a UN Summit. These goals provide an important framing for the responsible adoption of AI.

Johnson identifies power asymmetries in the governance and administrative functions of data which can lead to normatively coercive data structures and forms of extraction. He argues in favour of 'information justice' in the context of open data as a framework to address these power dynamics.

Relocating Data Justice

A central aim of this guide is to shift understandings of data justice away from the predominance of Eurocentric and "Global North" perspectives towards a more inclusive vision. This relocation operates among three dimensions: spatial, temporal, and vocational.

To relocate data justice spatially means to shift the 'where' of data justice away from practical approaches and research perspectives that emerge from current centres of social and economic power. This relocation attempts to account for meanings and values from outside the Global North as well as from marginalised voices within Global North societies. In so doing, data justice research and practice is enriched by frames of socio-cultural knowledge that are frequently overlooked by Western scholars and practitioners. Relocating data justice spatially is intended to promote greater cross-fertilisation of insights and experience in data justice research and practice, which are of particular importance in light of the ongoing failure of prevailing approaches to remediate the significant ecological and distributional challenges facing the world. Our goal here is to create conditions for participatory parity, so that crucial insights that have largely been excluded up to the present can now be centred.

The temporal relocation of data justice research and practice addresses the 'when' of data justice, accounting for its roots in social justice histories, including those whose relationship to data and digital infrastructures may not be immediately obvious. Data injustice is not an entirely new phenomena exclusively associated with the technological expansion of recent decades. Rather, it can be found in longstanding cultural, political, and socio-economic patterns of inequity and discrimination that find expression in contemporary networked society. These patterns are reflected in both the construction of data and its interpretation—given that the production of data is shaped by those with the power to collect it at scale and the degree of acceptance of the authority of the research products and practices informed by that data. A goal of this project is to urge researchers and practitioners to recognise the deep history of datafication and to bring an appropriately critical lens to the data innovation infrastructures and practices of the present.

To relocate data justice research and practice vocationally is to enlarge the "who" of data justice, transcending fixed notions of expertise to include and value the lived experience and "situated knowledge"[20] of impacted persons and communities, drawing from data advocacy and policymaking knowledge and from data justice adjacent activism (e.g., climate justice, global public health justice). This enlarged membership should be extended especially to those who have been historically discriminated against, disempowered, and marginalised. As such, this project embraces and promotes a constitutive plurality of knowledges to give an appropriate parity of voice to the academic articles and books, policymaking outputs, and activist papers, statements, and declarations that can contribute to conceptual and policy innovation.

For more information on the project, you can find further reading on the project website and our interim report.[21]

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[20] Haraway, 1988

[21] https://advancingdatajustice.org; https://gpai.ai/projects/data-governance/data-justice/advancing-data-justice-research-and-practice-interim-report.pdf

Policy Pilot Partner Collaboration

A key element in our strategy to broaden our understanding of data justice is our ongoing partnership with twelve Policy Pilot Partner (PPP) organisations recruited from across the world. These organisations were selected for their advocacy and activist work with local communities on topics related to media and technology adoption as well as experience researching topics surrounding datafication and human rights in distinct global contexts. From over 40 applicants across the globe, 12 partners across Africa, the Americas, Asia, and Oceania were selected and have provided invaluable local perspectives. Their critical assessments of the data justice pillars and of reflective questions for policymakers, developers and impacted communities have shaped our work and will continue to guide subsequent editions of these guidelines. Please see Annex 3 for more information on the important insights of our PPPs about the project.

Decidim Analysis

As part of the research that informs this guide, we developed an online participatory engagement platform using the decidim digital interface[22] to enable individuals and communities to provide insights and ground our work in developing an inclusive and actionable conception of data justice. Our Policy Pilot Partners also contributed responses. Prompts and questions included prompts about defining and situating the concept of data justice.

Among the insights gained from this outreach, we identified gaps in existing portrayals of data justice that reveal tensions between individual and collective justice. Respondents highlighted the need to include the role of colonialism in entrenching historical inequalities between and within countries and entities. Additionally, we found that existing definitions of data justice adequately address neither the underlying historical, cultural, and economic patterns of discrimination that have cascading effects on data collection, processing, and use, nor how inequality and the exclusion of individuals and groups may be replicated, automated, or created through data-driven processes and tools. Respondents also indicated that data justice should include concepts of access, understanding, and consent to data collection processes.

[22] https://decidim.org/

Platformisation and the gig economy

After becoming heavily popular mid to end of the 2010s, several platform apps started gaining popularity by offering services like food delivery, ride-hailing and home maintenance through digital means, effectively beginning a platformisation of several sectors of the economy. India has historically faced a division of labour on lines of caste with a disproportionate representation of the marginalised castes (constitutionally, the Scheduled Castes, Scheduled Tribes, and Other backward Classes) in the informal and unorganised sector and the lower levels of the formal sector. The gig-economy workers are also unorganised, with the technical designation of "partners" and "contractors" allowing the aggregator company to escape labour regulations. The terminology also allows the companies to change their commission for connecting them to "clients," something which has also risen to as much as a one-third cut. Adding to this precarity are the fuel prices, which have almost doubled in the past five years. The payments and incentives for the 'workers' are regulated by algorithmic tools that have vast amounts of data on market habits in each of the major cities they service – including traffic, location and prediction of customer habits, practices and behaviour. This allows the algorithms to optimise the profits of the aggregator companies by setting unreal targets for incentives and applying punitive dockings for failing to meet these targets. The algorithms also do not account for contingencies such as weather, sudden traffic, errors in maps, or faults of the client where the worker often ends up losing money from their earnings. Moreover, having predatorily captured the market and driven out other non-platform-app competitors, most workers are left with no option but to stay. Unchecked and non-transparent algorithms are reinforcing an age-old power inequality and forcing their workers to live in the margins.

Ananthu Rajagopal, Digital Empowerment Foundation

The Six Pillars of Data Justice Research and Practice

Taken together, our analysis of the decidim survey results, our critical exploration of the important conceptual work carried out in the first years of the academic data justice literature, our interactions with our Policy Pilot Partners, and our other desk-based research have led us to propose six pillars of data justice research and practice. These are the guiding priorities of power, equity, access, identity, participation, and knowledge.

While such pillars build on and expand previous attempts to specify the meaning of the term "data justice," they are not offered here as part of a definition per se. Key to the re-orientation of data justice undertaken in this guide is the idea that it is contextually determined. It should be seen as a set of critical practices and procedures that respond to—and enable the transformation of—existing power asymmetries and inequitable or discriminatory social structures rather than as a collection of abstract principles or prescriptions. Consequently, instead of answering the question "what is data justice" directly, the pillars are meant to be tools for orienting critical reflection and for generating constructive insights into how to transform data justice practice to redress the data inequities of the past and present in the ends of building more just societal and biospheric futures.

Figure 7: The six pillars of data justice

The six pillars shape this guide and our related research:

- The pillar of power demonstrates the importance of understanding the levels at which power operates and how power manifests in the collection and use of data in the world. The articulation of this pillar provides a basis from which to question power at its sources and to raise critical awareness of its presence and influence.

- The pillar of equity addresses the need to confront the root causes of data injustices as well as to interrogate choices about the acquisition and use of data, particularly where the goal or purpose is to target and intervene in the lives of historically marginalised or vulnerable populations.

- The pillar of access illuminates how a lack of access to the benefits of data processing is a starting point for reflection on the impacts and prospects of technological interventions. The beginning of any and all attempts to protect the interests of the vulnerable through the mobilization of data innovation should be anchored in reflection on the concrete, bottom-up circumstances of justice and the real-world problems at the roots of lived injustice.

- The pillar of identity addresses the social character of data and problematises its construction and categorisation, which is shaped by the sociocultural conditions and historical contexts from which it is derived.

- The pillar of participation promotes the democratisation of data scientific research and data innovation practices and the need to involve members of impacted communities, policymakers, practitioners, and developers together to collaboratively articulate shared visions for the direction that data innovation agendas should take.

- The pillar of knowledge involves recognising that diverse forms of knowledge and understanding can add valuable insights to the aspirations, purposes, and justifications of data use—including on the local or context-specific impacts of data-intensive innovation. Inclusion of diverse knowledges and ways of being can open unforeseen paths to societal and biospheric benefits and maximise the value and utility of data use across society in ways which take account of the needs, interests, and concerns of all affected communities.

Māori Data Sovereignty

Māori Data Sovereignty refers to the inherent rights and interests that Māori have in relation to the collection, ownership, and application of Māori data."

Before digital data, Māori data was passed down through generations (of families, groups, clans and tribes) via numerous oral forms, geographic features, in physical art and within carvings on houses, stone, wood and tattoos. Colonialism took control of most of our lands and natural resources and assimilated much of the knowledge in our data despite New Zealand having two constitutional documents He Whakaputanga (1835) and Te Tiriti o Waitangi (1840) giving Māori sovereignty and ensuring partnerships with the British. It wasn't until 1975 that new legislation recognised Te Tiriti.

One of the rights afforded to Māori was that all items of importance (taonga), Māori would have full authority of. Māori have always stated that Māori Data is a Taonga and of significant value, as is data from a western perspective, though the New Zealand government thought otherwise. In 2021, the statutory Waitangi Tribunal heard a claim by Māori that Data is a Taonga, in the Wai-2522 claim The Trans-Pacific Partnership Agreement (TPPA). The Tribunal agreed with Māori claimants and stated that Māori Data is a Taonga and the New Zealand Government must acknowledge this.

This key decision makes Māori Data Sovereignty unique from global Indigenous Data Sovereignty who don't have the protection of a government constitutional document for protection. Māori are now working with the New Zealand government in many areas to implement and protect Māori Data Sovereignty.

Māori have always had our ways of protecting, storing and disseminating our data under the same values we apply to all of our society, that it is always for collective well being, spiritual, environmental, societal, past, present and for our future. We are applying these values to digital data practices from what is the research purpose, to the data, research gathering practices, analysis and deployment. We recognise a multi participant practice, whether that is stakeholders or those in the eco system to be included in each stage of this data 'life cycle'.

This can enable more complete and less biased data sets.

Digital Natives Academy and their Expert Advisory Group

Data Justice Pillars in Focus

Power

1. Interrogate and critique power: Power dynamics can be present in many different places and in several different ways. It is therefore important to:

Understand where power operates in data innovation ecosystems. This can include

- **The geopolitical level.** For example, high-income nation-states and transnational corporate actors can control access to technological capabilities and pursue their own interests on the global stage. In doing this, they can exercise significant influence on which countries or regions are able to develop digital and data processing capacities.

- **The level of economy and infrastructure.** For example, large tech companies can decide which impacted communities, domestically and globally, are able to access the benefits of connectivity and data innovation, and they can control the provision of essential digital goods and services that directly affect the public interest.

- **The legal, policy, and regulatory levels.** For example, large international standards bodies, transnational corporations, trade associations, and nation states, can exercise disproportionate amounts of influence in setting international policies, standards, and regulation related to the governance of digital goods and services and data innovation.

- **The organisational and political levels.** For example, governments and companies can control data collection and use in intrusive and involuntary ways—especially where the public have no choice but to utilise the services they provide or must work in the environments they manage and administer.

- **The cultural level.** For example, power can operate through the way that large tech companies use relevance-ranking, popularity-sorting, and trend-predicting algorithms to sort users into different, and potentially polarising, digital publics or groups.

- **The psychological level.** For example, tech companies can use algorithmically personalised services to curate the desires of targeted data subjects. This can allow for the control or manipulation of consumer behaviour but also play an active and sometimes damaging role in identity formation, mental well-being, and personal development.

Understand how power manifests and materialises in the collection and use of data in the world. Power can surface in everyday life in several different ways. These include:

- **Decision-making power.** Here, an individual or organisational actor A has power over B to the extent that A can get B to do something that they would not otherwise do. Decision-making power is seen, for instance, in the way that government agencies collect and use data to build predictive risk models about citizens and data subjects or to allocate the provision of social services (and then act on the corresponding algorithmic outputs).

- **Agenda-setting power.** Here, an individual or organisational actor A has power over B to the extent that A sets the agenda that B then must fall in line with by virtue of A's control over the terms of engagement that set practical options within A's sphere of influence and interest. Agenda-setting power means that A can shoehorn the behaviour of B into a range of possibilities that is to A acceptable, tolerable, or desired. This kind of power is explicit, for example, in practices of regulatory capture, where large tech corporations secure light touch regulation through robust lobbying and legal intervention.

- **Ideological power.** This kind of power is exercised where people's perceptions, understandings, and preferences are shaped by a system of ideas or beliefs in a way which leads them—frequently against their own interests—to accept or even welcome their place in the existing social order and power hierarchy. For example, the priorities of "attention capture" and "screen-time maximisation", that are pursued by certain social media and internet platforms, can groom users within the growing ecosystem of compulsion-forming reputational platforms to embrace the algorithmically manufactured comforts of life-logging, status-updating, and influencer-watching all while avoiding confrontation with realities of expanding inequality and social stagnation.

- **Normalising power.** Normalising power manifests in the way that the ensemble of dominant knowledge structures, scientifically authoritative institutions, administrative techniques, and regulatory decisions work in tandem to maintain and 'make normal' the status quo of power relations. Where tools of data science and statistical expertise come to be used as techniques of knowledge production that claim to yield a scientific grasp on the inner states or properties of observed individuals, forms of normalising or disciplinary power can arise. Data subjects who are treated merely as objects of prediction or classification and who are therefore subjugated as objects of authoritative knowledge become sitting targets of disciplinary control and scientific management.

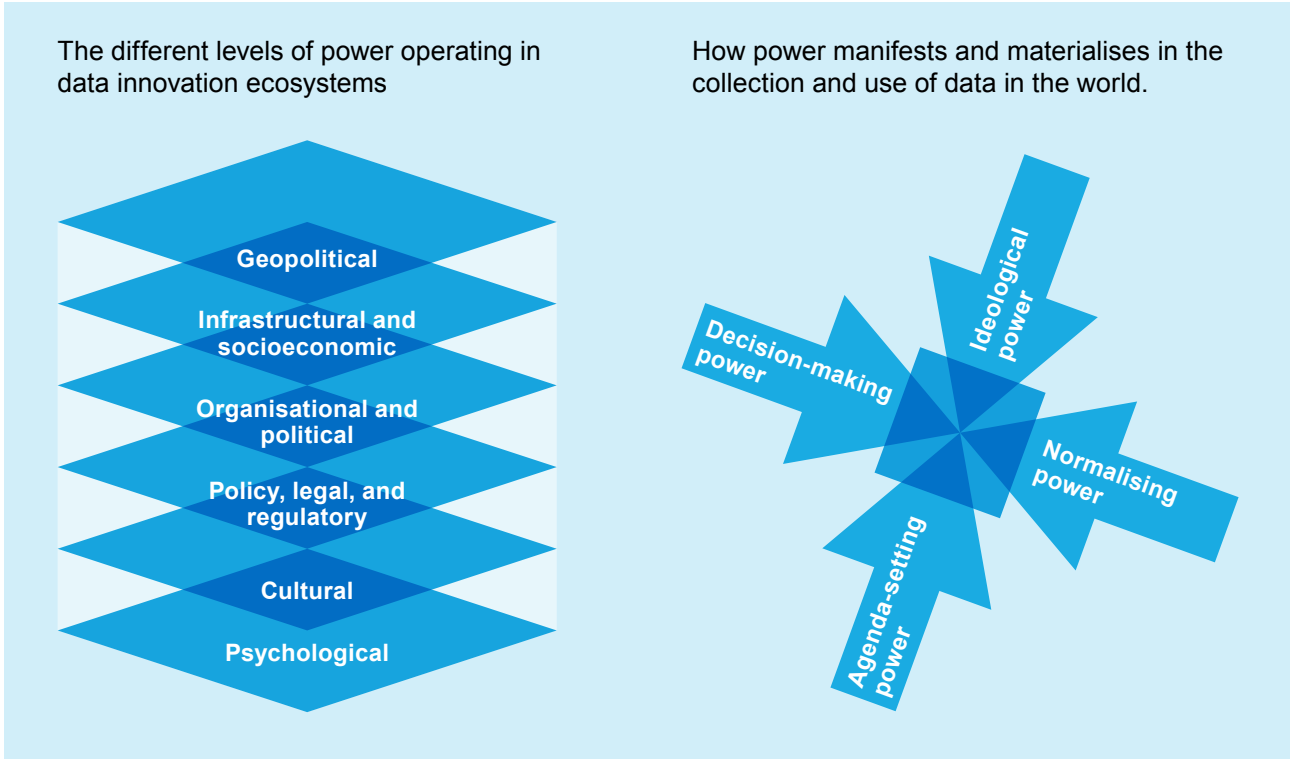


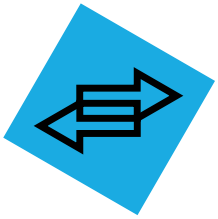
Figure 8: Understanding the levels at which power operates in the collection and use of data, and how it manifests

Use this understanding to question power at its sources and to raise critical awareness of its presence and influence. Interrogations of where and how power operates are first steps in a longer journey of questioning and critical analysis. An active awareness of power dynamics in data innovation ecosystems should also lead to further questions:

- What are the interests of those who wield power or benefit from existing social hierarchy?
- How do these interests differ from other stakeholders who are impacted by or impact data practices and their governance?
- How do power imbalances shape the differing distribution of benefits and risks among different groups who possess varying levels of power?
- How do power imbalances result in potentially unjust outcomes for marginalised, vulnerable, or historically discriminated against groups?

2. Challenge Power: Mobilise to push back against societally and historically entrenched power structures and to work toward more just and equitable futures. While the questioning and critiquing of power are essential dimensions of data justice, its purpose of achieving a more just society demands that unequal power dynamics that harm or marginalise impacted individuals and communities must be challenged and transformed.

3. Empower People: People must be empowered to draw on democratic agency and collective will to pursue social solidarity, political equity, and liberation. When people and communities come together in the shared pursuit of social justice through mutually respectful practices of deliberation, collaboration, dialogue, and resistance, power becomes empowerment. It becomes constructive and opens transformative possibilities for the advancement of data justice, social solidarity, and political equity.



Equity

1. Consideration of equity issues should begin before any data are collected or used. Issues of equity should be confronted by developers and organisations at the earliest stage of project planning and should inform whether data innovation practices are engaged in at all: Data equity is only partially served by seeking to improve data and data practices, such as by pursuing data quality, or increasing its representativeness and accuracy. While errors and incompleteness are obstacles to data equity, the choice to acquire and use data can itself be a question of justice, particularly where the goal or purpose of a data practice is to target and intervene in the lives of historically marginalised or vulnerable populations. Here, the question may not be 'how can we repair an imperfect system or make it more effective', but rather 'does a particular use or appropriation of data enable or disable oppression?'; and 'does it preserve or combat harmful relations of power?' A perfectly engineered system employed by an oppressive regime (either governmental or commercial) can facilitate and potentially amplify data injustice.

2. The purpose of the pursuit of data equity should be to transform historically rooted patterns of domination and entrenched power differentials: Concerns with elements of data innovation practices like data security, data protection, algorithmic bias, and privacy are an important subset of data equity considerations, but the transformative potential of data equity to advance social justice comes in a step earlier and digs a layer deeper: It starts with questions of how longer-term patterns of inequality, coloniality, and discrimination penetrate data innovation practices and their governance. Data equity, in this deeper context, is about overhauling power imbalances and forms of oppression that manifest in harmful, unjust, or discriminatory data practices. To realise this sort of equity, those with power and privilege must be compelled to respond to and accommodate the claims of people and groups who have been marginalised by existing political and socioeconomic structures.

3. Combat any discriminatory forms of data collection and use that centre on disadvantage and negative characterisation: Data equity involves confronting and combating statistical representations of marginalised, vulnerable, and historically discriminated against social groups that focus mainly or entirely on measurements of 'disparity, deprivation, disadvantage, dysfunction, and difference', the '5 D's'. Approaches to statistical measurement and analysis that centre on disadvantage and negative characterisation produce feedforward effects which further entrench and amplify existing structures of inequity, discrimination, and domination.

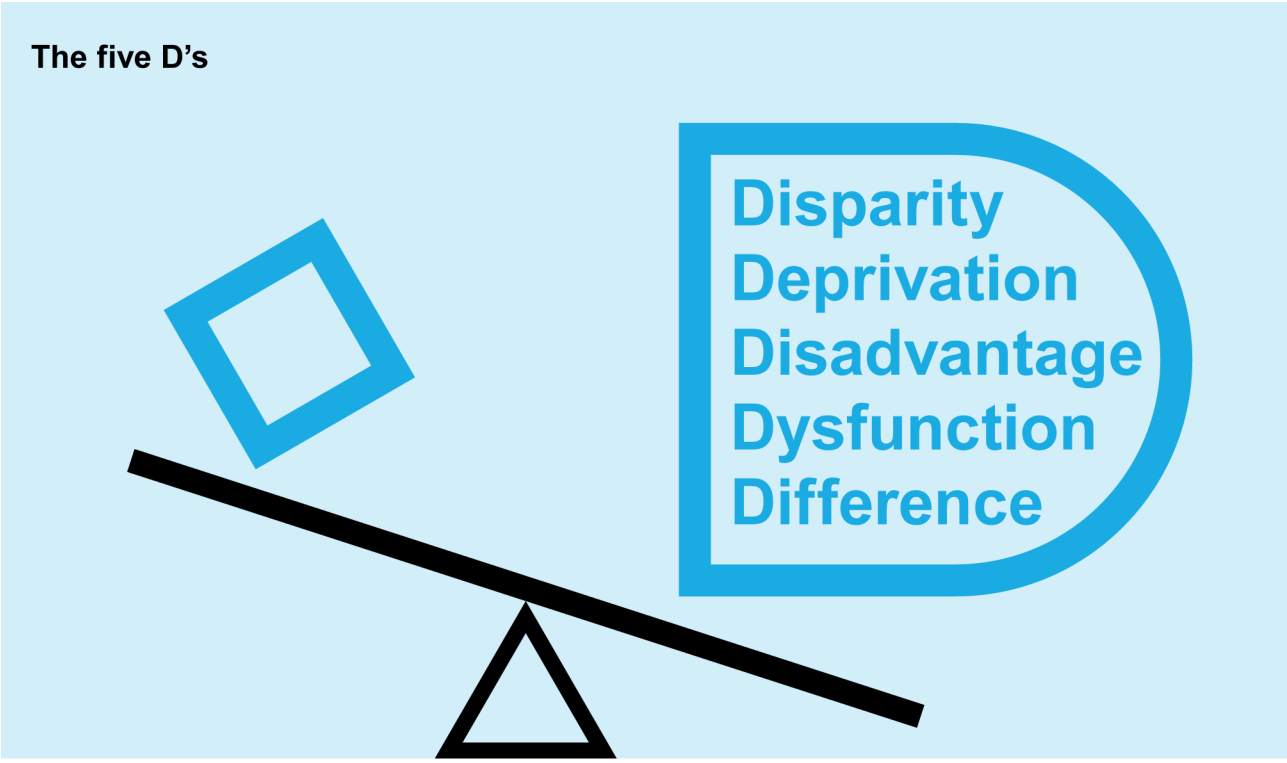


Figure 9: Single axis modes of statistical representation; adopted from the 5 D's presented by Kukutai and Taylor (2016)

4. Pursue measurement justice and statistical equity: Measurement justice and statistical equity involve focusing on collecting and using data about marginalised, vulnerable, and historically discriminated against communities in a way that:

- Advances social justice.
- Draws on their strengths rather than on perceived weaknesses.
- Approaches analytics constructively with community-defined goals that are positive and progressive rather than negative, regressive, and punitive.

This constructive approach necessitates a focus on socially licenced data collection and statistical analysis, on individual- and community-advancing outcomes, and strengths-based approaches.

Access

1. Confronting questions of equitable access involves starting from real-world problems of material inequality and structural injustice. Access is about providing people tangible paths to data justice by addressing the root causes of social, political, and economic injustice: Existing sociohistorical, economic, and political patterns of disadvantage must be taken as the starting point for reflection on the equitable access, because these create material conditions of injustice and a lack of access to the benefits of data processing. The beginning of any and all attempts to expand equitable access should be anchored in reflection on the concrete, bottom-up circumstances of justice, in its historical and material preconditions. Combatting the real-world problems at the roots of lived injustice should be a first priority.

2. Equitably open access to data through responsible data sharing: Calls for 'open data' sometimes run the risk of oversimplification and appropriation by market forces which could end up curtailing equitable access. The concept of 'open data' itself must be bounded and qualified. At all times, those who share data ought to remain critically aware of the moral claims and rights of the individuals and communities where the data came from, of the real-world impacts of data sharing on those individuals and communities, and of the practical barriers and enablers of equitable and inclusive research. There is also a need to consider the right of communities to access and benefit from the use of their data. Building on this, community-rights based approaches to data access and data sharing should include a strong participatory component. Here equitably opening access to community data entails the democratic governance of data collection and use as well as robust regimes of social license and public consent.

3. Equitably advance access to research and innovation capacity: Long-standing dynamics of global inequality may undermine reciprocal sharing between research collaborators from high-income countries (HICs) and those from low-/middle-income countries (LMICs). Given asymmetries in resources, infrastructure, and research capabilities, data sharing between LMICs and HICs, and the transnational opening of data, can lead to inequity and exploitation. Moreover, data originators from LMICs may generate valuable datasets that they are then unable to independently and expeditiously utilise for needed research, because they lack the aptitudes possessed by scientists from HICs, who are the beneficiaries of arbitrary asymmetries in education, training, and research capacitation. In redressing these access barriers, emphasis must be placed on 'the social and material conditions under which data can be made useable, and the multiplicity of conversion factors required for researchers to engage with data'. Equalising know-how and capability is a vital counterpart to equalising access to resources, and both together are necessary preconditions of just data sharing. Data scientists and developers engaging in international research collaborations should focus on forming substantively reciprocal partnerships where capacity-building and asymmetry-aware practices of cooperative innovation enable participatory parity and thus greater research access and equity.

4. Equitably advance access to the capabilities of individuals, communities, and the biosphere to flourish: This involves prioritising individual, social, and planetary well-being as well as an understanding that the attainment of well-being necessitates the stewardship of the human capabilities that are needed for all to freely realise a life well-lived. A capabilities- and flourishing-centred approach to just access demands that data collection and use be considered in terms of the affordances they provide for the ascertainment of

well-being, flourishing, and the actualisation of individual and communal potential for these. It demands a starting point in ensuring that 'practices of living' enable the shared pursuit of the fullness, creativity, harmony, and flourishing of human and biospheric life (what Abya Yala Indigenous traditions of Bolivia and Ecuador have called 'living well' or sumak kawsay in Quechua, suma qamaña in Aymara, or buen vivir in Spanish).

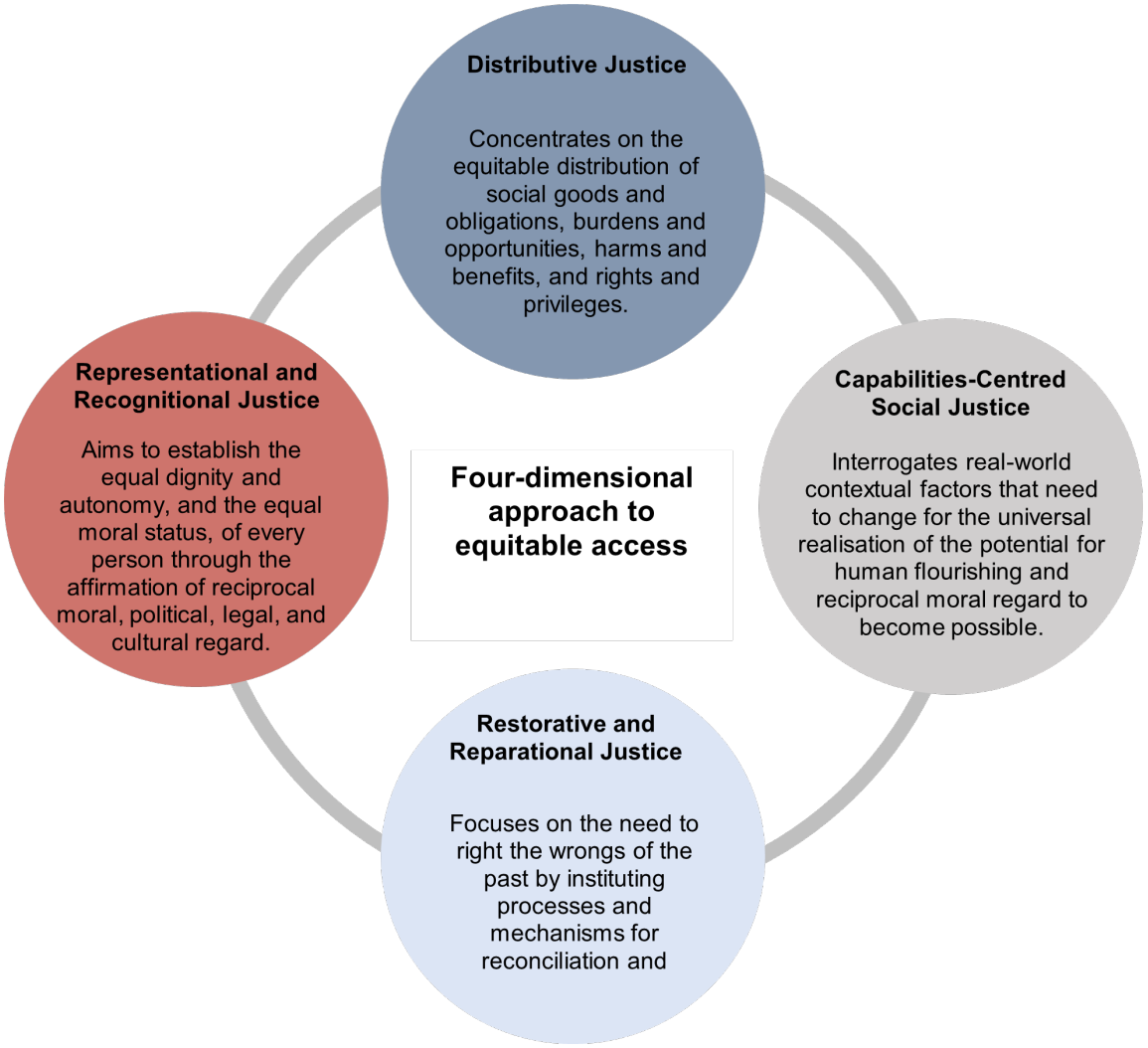


Figure 10: Four-dimensional approach to equitable access

5. Confronting questions of equitable access involves four dimensions of data justice: Concerns with equitable access should:

(1) Concentrate on the equitable distribution of the risks and benefits of data use.
This is the dimension of distributive justice.

(2) Examine the material preconditions necessary for the universal realisation of justice.
This is the dimension of capabilities-centred social justice.

(3) Rectify the identity claims of those who have faced representational injury.
This is the dimension of representational and recognitional justice.

(4) Right the wrongs of the past so that justice can operate as a corrective dynamic in the present.
This is the dimension of restorative and reparational justice.

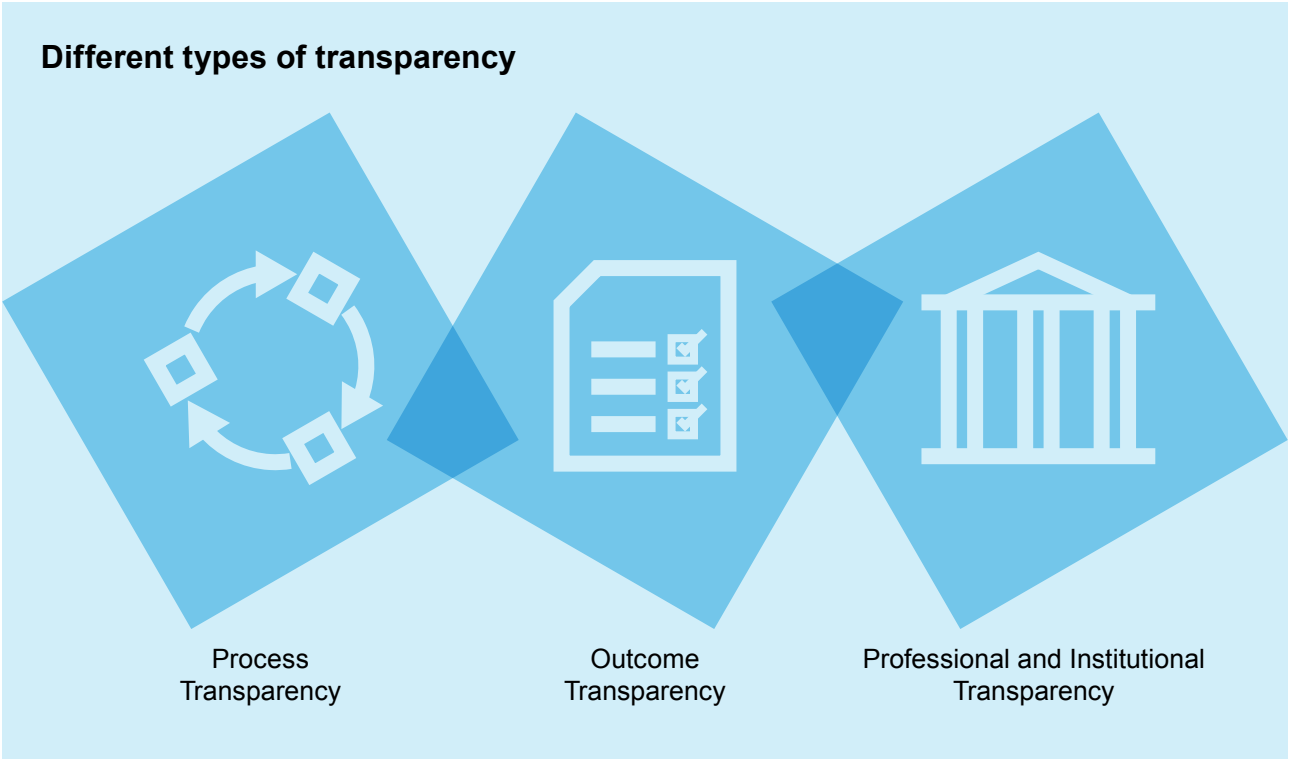


Figure 11: Different types of transparency

This four-dimensional approach to data justice should use the ethical tools provided by the principles of social justice to assess the equity of existing social institutions, while also interrogating the real-world contextual factors that need to change for the universal realisation of the potential for human flourishing and reciprocal moral regard to become possible. It should likewise enable the reparation of historical injustices by instituting processes and mechanisms for reconciliation and restitution. While the first three of these facets remain integral to the advancement of access as it relates to data justice research and practice, they tend to focus primarily on addressing present harms and making course corrections oriented to a more just future. Restorative justice reorients this vision of the time horizons of justice. It takes aim at righting the wrongs of the past as a redeeming force in the present.

6. Promote the airing and sharing of data injustices across communities through data witnessing: Datafication makes possible the greater visibility of everyday life. Despite the ways increasing visibility may expose some to harm or exploitation, it can also be harnessed in positive ways to promote liberating transformation by exposing lived injustices, historical abuses, and moral harms. The growth of a networked and connected global society multiplies the transformative power of observation and communication. It enables the far-reaching airing and sharing of previously hidden inequities and mistreatment. This witnessing of injustice can occur both through the exposure of harms that are present in proximate data work and through the employment of digital media at-a-distance to observe harms that present in remote locations. Data witnessing should be marshalled as a force for change and as an opportunity to expand justice by means of transparency and voice.

7. Promote the airing and sharing of data injustices across communities through transparency: The role of transparency in the airing and sharing of potentially unjust data practices must also be centred. Transparency extends both to outcomes of the use of data systems and to the processes behind their design, development, and implementation.

- **Process transparency** requires that the design, development, and implementation processes underlying the decisions or behaviours of data systems are accessible for oversight and review so that justified public trust and public consent can be ascertained.

- **Professional and institutional transparency** requires that, at every stage of the design and implementation of a project, responsible team members should be identified and held to rigorous standards of conduct that secure and maintain professionalism and institutional transparency. These standards should include the core, justice-promoting values of integrity, honesty, and sincerity as well as positionality-aware modes of neutrality, objectivity, and impartiality. All professionals involved in the research, development, production, and implementation of data-intensive technologies are, first and foremost, acting as fiduciaries of the public interest and must, in keeping with these core justice-promoting values, put the obligations to serve that interest above any other concerns.

- **Outcome transparency** demands that stakeholders are informed of where data systems are being used and how and why such systems performed the way they did in specific contexts. Outcome transparency therefore requires that impacted individuals can understand the rationale behind the decisions or behaviours of these systems, so that they can contest objectionable results and seek effective remedy. Such information should be provided in a plain, understandable, non-specialist language and in a manner relevant and meaningful to those affected.

Data Justice and the last mile of the Global South: why rural areas matter!

While discussions are underway about relocating research and data justice practice from the North perspective to the South one, a crucial question remains: how to deal with rural areas? This “last mile” of the Global South, home to a large part of poor and marginalised communities, is generally characterised by a lack of basic infrastructure such as roads, making access difficult. In addition, low ICT and internet penetration rates exacerbate the digital and data divide, due to the scarcity of telecommunication operators’ networks because of the lack of return on investment. Furthermore, low literacy rate and digital literacy constitute a real obstacle that needs to be overcome on the way to putting the pillars of data justice into practice. But let us start from the beginning. How can we speak about data justice when there is almost no digital data as well as means to produce them in some locations? Data justice should start by addressing this first challenge. Furthermore, how can we raise awareness and empower people who are still struggling to meet the physiological needs against data injustice? Although all the six pillars matter, some of them can easily reveal some other challenges: the pillar of identity and the pillar of participation. No technology is neutral and the identity of communities through social character of data should be preserved. Reification and erasure of identities should be avoided. But how do you deal with such a large diversity, especially in Africa where a single country may be home to more than 240 tribes, each with its own local identity? How to involve or consider such a large number in the development process of an AI-based solution? So, new approaches are needed.

Jean Louis E.K. Fendji, AfroLeadership

Identity

1. Interrogate, understand, and critique harmful categorisations: The construction and categorisation of data, particularly when it is about people, is a fundamentally social activity that is undertaken by humans whose views of the world are, in part, the product of cultural contexts and historical contingencies. As such, the construction and categorisation of data is shaped by the sociocultural conditions and historical contexts from which it is derived. The social character of data coupled with the sorting and clustering that proceeds from its cleaning and pre-processing can lead to categorisations that are racialised, misgendered, or otherwise discriminatory. This can involve the employment of binary categorisations and constructions—for example, gender binaries (male/female) or racial binaries (white/non-white)—that are oriented to dominant groups and that ought to be critically scrutinised and questioned. Data justice calls for examining, exposing, and critiquing histories of racialisation and discriminatory systems of categorisation reflected in the way data is classified and the social contexts underlying the production of these classifications.

2. Challenge the reification of identities by resisting the imposition of data categories as a convenience of computational sorting and optimisation: In the construction and categorisation of data, system designers and developers can mistakenly treat socially constructed, contested, and negotiated categories of identity as fixed and natural classes. When this happens, the way that these designers and developers categorise identities can become naturalised and reified. This can lead to the inequitable imposition of fixed attributes to classify people who do ascribe to these categorisations or who view them as fluid and inapplicable to the way they identify or regard their themselves.

3. Challenge the erasure of identities by contesting the deletion or omission of identity characteristics: Where designers and developers miss, exclude, or group together categories or classes of data that pertain to self-ascribed identity characteristics (like race, gender, or religious affiliation), they run the risk of erasing or rendering invisible the identities of those who value or claim the identity characteristics that have been excluded or subsumed. For instance, the designers of a data system may group together a variety of non-majority racial identities under the category of “non-white” and thereby potentially erase a variety of distinctive identity claims, or they may record gender only in terms of binary classification (male/female) and, in turn, erase the identity claims of non-binary and trans people.

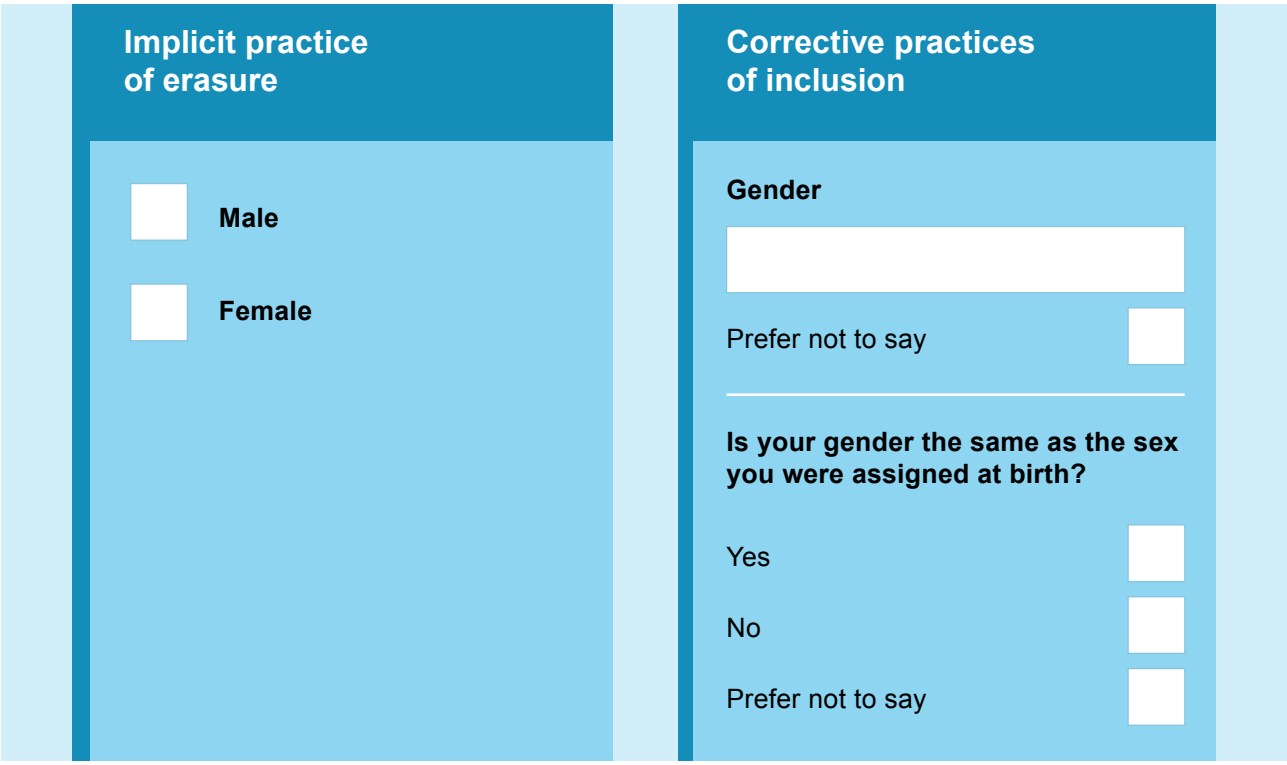


Figure 12: Practices of erasure that take place during project lifecycle

4. Challenge the erasure of intersectional identity characteristics: Intersectional discrimination occurs where protected characteristics like race and gender overlap in ways that compound or magnify discriminatory harms. Designers and developers can produce and use data systems that disparately injure people who possess unacknowledged intersectional characteristics of identity which render them vulnerable to harm, but which are not recognised in the bias mitigation and performance testing measures taken by development teams. For instance, a facial recognition system could be trained on a dataset that is primarily populated by images of white males, thereby causing the trained system to systematically perform poorly for darker skinned females. If the designers of this system have not taken into account the vulnerable intersectional identity (in this case, darker skinned females) in their bias mitigation and performance testing activities, this identity group becomes invisible and so too do injuries done to its members.

Online abuse of politicians in Uganda

The internet is the most powerful platform used for accessing information, communication, and community mobilisation. However, it has oftentimes been used to silence, attack and threaten specific groups of women who are often referred to as 'public figures'. This makes the internet a dangerous place for especially women in leadership positions such as politics. This could be because the existing digital technologies allow anonymity of the perpetuators and the weak existing legal and regulatory frameworks on online abuse in Uganda. Therefore, the problem of online abuse is getting worse every day with the evolving use of tech and misuse of data. Women of Uganda Network (WOUGNET)'s 2021 study discovered that almost half of Ugandan women interviewed had experienced online gender based violence and 88% agreed it is widespread. For instance, women in politics use social media less than their male counterparts due to the abuse and threats they face while using the various social media platforms. WOUGNET's 2021 study points out that Facebook is where OGBV occurs most (23%) followed by WhatsApp (21%), Twitter (18%), and etc.

In 2021, Uganda's national elections and campaigns were majorly conducted digitally in order to prevent the spread of coronavirus. Ugandan women politicians as a result experienced online abuse in different forms such as trolling, body shaming, sexualized and gendered insults on both Twitter and Facebook. Women politicians were more affected than their male counterparts. For instance, 50% of Ugandan women politicians were reported to have experienced trolling compared to 41% of men. Previously, Sylvia Rwabwogo, the former Kabarole District Woman Member of Parliament dragged Brian Isiko to court in 2018 for persistently sending her annoying unconsented love messages which is considered offensive and a form of cyber harassment and breach of privacy. Ugandan female politicians continue to face violence. However, there are a few women politicians who report cases of abuse and violence online to legal authorities because of fear of being judged and ridiculed by society hence few cases documented. In 2019, following Robert Kyagulanyi's accusation of treason and attempted terrorism who is also a male Ugandan opposition politician, the Wall Street Journal reported that Ugandan security officials worked with Huawei technicians to hack into his phone. This is a form of abuse and a violation of his privacy.

There has been increased data collection, sharing, storage, and processing of personal information and there are allegations of data misuse making public figures such as politicians increasingly vulnerable to abuse online and offline in the hands of state and non-state actors. Continued online abuse may lead to economic loss, social isolation, self-censorship, limited mobility and psychological harm of women politicians which can affect the progress being made in promoting women's rights online in Uganda.

It is clearly evident that we need urgent action to address the growing abuse against female politicians in Uganda in order to make progress to achieving gender equality. This requires challenging discrimination and stereotypes, public accountability towards gender equality in online safety, and bringing women's issues to the forefront of political agendas.

Sandra Aceng, Women of Uganda Network

Participation

1. Democratise data and data work: Prioritise meaningful and representative stakeholder participation, engagement, and involvement from the earliest stages of the data innovation lifecycle to ensure social licence, public consent, and justified public trust. The democratisation of data scientific research and data innovation practices involves bringing members of impacted communities, policymakers, practitioners, and developers together to collaboratively articulate shared visions for the direction that data innovation agendas should take. This entails the collective and democratically based determination of what acceptable and unacceptable uses of data research and innovation are, how data research and innovation should be governed, and how to integrate the priorities of social justice, non-discrimination, and equality into practices of data collection, processing, and use.

2. Challenge existing, domination-preserving modes of participation: Where current justifications and dynamics of data practices reinforce or institutionalise prevailing power structures and hierarchies, the choice to participate in such practices can be counterproductive or even harmful. When options for a community's participation in data innovation ecosystems and their governance operate to normalise or support existing power imbalances and the unjust data practices that could follow from them, these options for involvement should be approached critically. A critical refusal to participate is a form of critical participation and should remain a practical alternative where extant modes of participation normalise harmful data practices and the exploitation of vulnerability.

3. Ensure transformational inclusiveness rather than power-preserving inclusion: Incorporating the priority of inclusion into sociotechnical processes of data innovation can be detrimental where existing power hierarchies are sustained or left unaddressed. Where mechanisms of inclusion normalise or support existing power imbalances in ways that could perpetuate data injustices and fortify unequal relationships, these should be critically avoided. Transformational inclusiveness demands participatory parity so that the terms of engagement, modes of involvement, and communicative relationships between the includers and the included are equitable, symmetrical, egalitarian, and reciprocal.

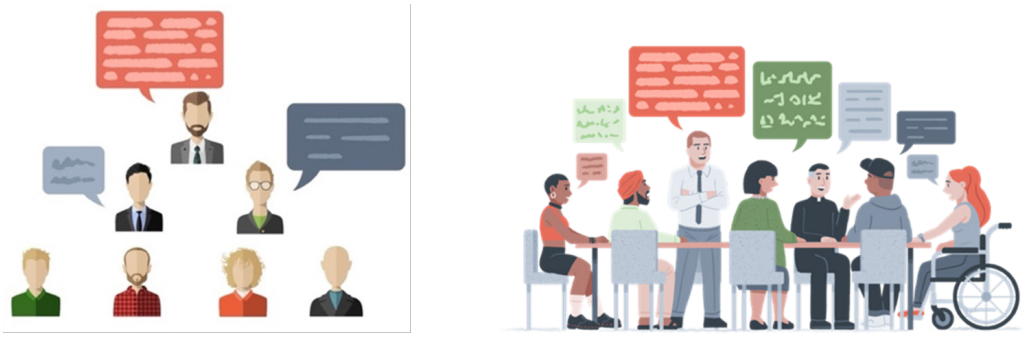


Figure 13: Moving towards transformational inclusiveness

Knowledge

1. Embrace the pluralism of knowledges: Different communities and sociocultural groups possess unique ways of seeing, understanding, and being in the world. This plurality of knowledges, and of lived experience, should inform and be respected in practices of data collection, processing, and use as well as in the policy-making practices surrounding the governance of data technologies. Embracing the pluralism of knowledges involves recognising that diverse forms of knowledge, and ways of knowing and understanding, can add valuable insights to the aspirations, purposes, and justifications of data use—including on the local or context-specific impacts of data-intensive innovation. Moreover, inclusion of diverse knowledges and ways of being can open unforeseen paths to societal and biospheric benefits and maximise the value and utility of data use across society in ways which take account of the needs, interests, and concerns of all affected communities.

2. Challenge the assumed or unquestioned authority of technical, professional, or "expert" knowledge across scientific and political structures: Processes of knowledge creation in data science and innovation are social processes which require scrutiny and wider public engagement to hold those with "expertise" to account and to ensure that data science and innovation progress in ways which align with wider societal values. This means that data technology producers and users have a responsibility to communicate plainly, equitably, and to as wide an audience as possible: Clear and accessible public communication of research and innovation purposes/goals and data analytic and scientific results, should enable the public to interrogate the claims and arguments being put forward to justify data-driven decision-making and data innovation agendas. This also means that members of the public have a corollary responsibility to listen—i.e., to pay attention to, engage with, and critically assess the scientifically authoritative knowledge claims and technological systems that impact them.

3. Prioritise interdisciplinarity: Approach the pursuit of understanding of data innovation environments—and the sociotechnical processes and practices behind them—through a holistically informed plurality of methods. This involves placing a wide range of academic disciplines and specialised knowledges conceptually on par, enabling an appreciation and integration of a wide range of insights, framings, and understandings. Ways of knowing that cannot (or are not willing to) accommodate a disciplinary plurality of knowledgeable voices that may contribute to richer comprehensions of any given problem cease to be knowledgeable per se.

4. Pursue a reflexive and positionally aware objectivity that amplifies marginalised voices: A robust approach to objectivity demands that knowers have positional self-awareness, which acknowledges the limits of everyone's personal, historical, and cultural standpoint. It also demands that knowers carry out critical and systematic self-interrogation to better understand these limitations. This launching point in reflexive and positionally aware objectivity can end up leading to more objective and more universalistic understandings than modes of scientific or technical objectivity which stake a claim to unobstructed neutrality and value-free knowledge that evades self-interrogation about the limits of standpoint and positionality. One reason for this has to do with power dynamics. Reflexive and positionally aware objectivity starts from a reflective recognition of how differential relations of power and social domination can skew the objectivity of deliberations by

biasing the balance of voices that are represented in those deliberations. It then actively tries to include and amplify marginalised voices in the community of inquiry to transform situations of social disadvantage where important perspectives and insights are muted, silenced, and excluded into situations that are scientifically richer and more advantaged. Such richer and more inclusive ecologies of understanding end up producing more comprehensive knowledge and more just and coherent practical and societal outcomes. Reflexive and positionally aware objectivity amplifies the voices of the marginalised, vulnerable, and oppressed as a way to overcome claims of objectivity, impartiality, and neutrality that mask unquestioned privileges.

Data Justice Pillars in Action

To help orient the reader to how the six data justice pillars could be applied in practice, we offer in this section concrete instances that illustrate the ways governments and civil society organisations have been able to engage in transformative practices that have advanced data justice. One example is offered for each pillar. More of these examples can be found in: Data Justice Stories: A Repository of Case Studies.

POWER:

Using technology as a tool for social liberation rather than as an instrument for enforcing power hierarchies is the ideal that drives Hiperderecho, a non-profit organisation that has launched campaigns assisting women and LGBTQ+ individuals in seeking justice against non-consensual sharing of intimate images or from online harassment. Similarly, through "¿Quién vigila a los vigilantes?" (en: "Who guards the guards?"), they provide resources for activists and citizens who when exercising the right to protest in Peru increasingly face instances of tech-enabled surveillance, intimidation, and silencing.

Figure 14: Data justice is about social licence and democratic governance

ACCESS:

Common Cause Zambia advocates for open and secure internet access in Zambia during electoral periods through the launch of the #KeepItOn campaign as digital tools are imperative for communications during these periods. The organisation presented an open letter that was supported by 240 organisations across the globe to the President of Zambia to protest using the internet as a means of silencing.

KNOWLEDGE:

With experiential knowledge of the sex worker industry guiding their research output, Hacking//Hustling is an intersectional feminist collective that has raised awareness on numerous challenges and barriers faced by the sex workers in a digital era. As the industry continues to be marginalised and stigmatised across the world, they notably highlighted how the onset of the COVID-19 pandemic brought about challenges in welfare, employment, and censorship policies arising from the shift to online modes of sex work. Hacking/Hustling conducts research that forwards reflexive and pluralist forms of knowledge to advocate for the provision of comprehensive government support mechanisms for socio-economically vulnerable groups.

PARTICIPATION:

Responding to the gender disparities in Africa's ICT ecosystem, the Women of Uganda Network (WOUGNET) has launched numerous projects, workshops, networking activities, and advocacy campaigns that aim to effectively integrate women into existing digital infrastructure and novel technologies. By introducing new ICT tools in parallel with radios and televisions, WOUGNET effectively addresses the availability and access to technology that may affect women's participation in the digital age. Such incremental progress not only can mitigate gender gaps, but it can also provide new platforms for participation and expression from a section of society often excluded from decision-making.

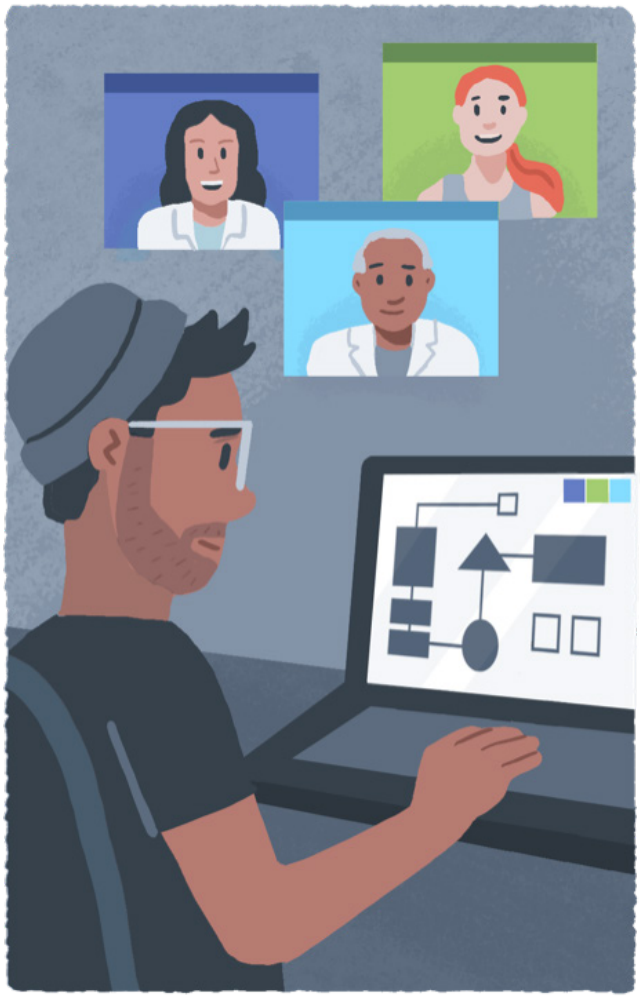


Figure 15: Many voices should inform the design process

EQUITY:

In response to the isolation of Indigenous Australians from the control and production of data, as well as the neglection of their knowledge, worldviews, and needs, the Maiam nayri Wingara Aboriginal and Torres Strait Islander Data Sovereignty Collective was formed. Their founding 2018 Communique was launched at the Indigenous Data Sovereignty Summit and emphasised the rights of Indigenous communities to refuse to participate in inequitable data processes. It also argued for the importance of putting into practice forms of Indigenous data governance that would more equitably address the concerns, needs, and aspirations of Indigenous Australians.

IDENTITY:

Highlighting how the internet has become an invasive and colonising technology that is eroding the Cabécar Indigenous cosmovision and culture in Costa Rica, Sulá Batsú and Asociación de Mujeres Cabécar de Alto Pacuare launched the “Okama Suei” platform for communities to decide if and how they wish to use digital technologies. The platform serves as an avenue for empowerment and defence of the cosmovision and the culture of Indigenous women through intergenerational local knowledge exchange. It thereby aims to strengthen local identities and knowledge bases in the face of a globalised internet largely developed in the Transatlantic and former colonial power territories.

Putting the Pillars into Practice I: Developing Shared Understandings of Data Justice

As our Policy Pilot Partner collaborations and research have shown, it is important to recognise that the idea of data justice is contextually bounded. It can mean something different to different people, depending on their varying histories, social and cultural backgrounds, needs, and circumstances. Variations in how communities understand data justice are rooted in differences in the shared values, languages, and lived experiences of the communities and groups who take it up and use it.

A durable concept of data justice should therefore be able to accommodate multiple understandings of justice and equity.[23] Moreover, it should remain open to revision. It should be able to evolve through continuous dialogue and re-evaluation so that it can stay responsive to diverse and changing realities of power, culture, and datafication.

It may be useful, along these lines, to carry out a reflective and deliberative process in developing the shared understandings of data justice that will animate the way you, and your community, approach putting the idea into practice. This will allow you to shape your data justice practices in accordance with your own values, goals, and purposes and, where helpful, to tailor the data justice pillars to your unique perspectives and vision.

Here are some prompts to support this process of reflection:

Developing a Shared Understanding of Data Justice
Reflection Questions
• What comes to mind when you think of the words “justice” and “equity”? Do you understand these words as having to do with ethics or the legal sphere, or both? If you think of justice and equity as ethical or moral ideas, what are their main properties?
• Are there any other words that you see as equivalent to “justice” and “equity” or that you feel are better suited to your community’s history, its social and cultural background, and the lived experience of its members?
• What comes to mind when you think of the words “injustice” and “inequity”? How, if at all, do these understandings enrich the way you think of the meanings of “justice” and “equity”?
• Before engaging this guide, were you familiar with the idea of social justice? If so, what did this concept mean to you?
• Refer to the ***Key Term: Social Justice*** box above. How does this description of social justice align with your own understanding? How does it differ?

[23] In undertaking this research, our team wanted to reflect on and recognise how our own positionality could shape the way we were approached our research on data justice. We have attached our positionality statement as Annex 4. Details on the process of engaging in positionality reflection are explored below.

- How would you apply your understandings of justice, equity, and social justice in contexts of data collection and use? Do the data justice pillars outlined above (power, access, equity, participation, identity, and knowledge) align with these understandings?

- If the pillars differ from your understandings in significant ways, what, if any, resonance and harmonies do you feel are possible between your understandings and the pillars? What other pillars or guiding priorities can be included in your own approach to data justice?

The terminology of 'data justice'

Before and during our ADJRP research we had a doubt (that would later be corroborated) about the use of the term Data Justice. Although we were familiar with these issues it was a term we had heard in some specific discussions but had not delved into. The unfamiliarity with the concept turned out to be real, whether for public policy design or systems development in the private sector. The breadth and diverse meanings of data justice make it necessary to put the term in context, and to link it with definitions that might share similar characteristics, such as "Data Ethics" or "Algorithmic Justice", "Data Protection" and "Data Governance". Thus, Data Justice can in more technical contexts refer to Algorithmic Justice and in more legal contexts to Data Protection. But it is also linked to Social Justice, a term that is close to us, but associated with a political discourse of the Chilean left-wing progressivism that has gradually become more transversal. Social Justice is the fair and equitable distribution of goods, which in this case would be the benefits (and damages) of data processing. This invites us to change the conceptions of data use and privacy, which in our country are individualistic, for a more collective idea. Some have argued that data problems are collective, likening them to ecological problems, also because the consequences of data problems are suffered on a collective scale. Reflecting on what is just or unjust, who will decide it and how, outside institutional spheres, is always problematic, and certainly in many cases abstract if the concrete forms of implementation and application of technology in each particular culture and context are not taken into consideration.

Romina Garido, GobLab UAIk

Putting the Pillars into Practice II: Community Reflection and Aspiration

In this section, we start to put the conceptual work discussed thus far into action by laying out how impacted individuals and communities can critically reflect on the past, present, and future of data justice.

Communities may engage with data justice through reflection on past injustices and harms, through a confrontation of the legacies of discrimination and inequity in the present, and through the collaborative development of aspirations and visions for a more just and equitable future community life. This section discusses some of considerations to address in relation to each of these dimensions as well as the practical approaches that are available to communities in their transformative efforts to advance data justice.

Past

Reflecting on the history of the community and its relationships with external stakeholders (e.g. policy makers, developers or civil society) is important to understand how data justice and/or injustice have occurred. Reflecting on past experiences can help the community to identify its strengths, capacities and characteristics as well the power structures that have enabled and/or limited its flourishing. Moreover, understanding past experiences is important, because it helps people to, individually and collectively, identify where harms have occurred, who has been responsible for them and how restorative justice can be realised. Activities might include:

- **Community Engagement** focussed at collecting stories of data justice and/or injustice and how these have occurred.
- **Community Mobilisation** to address past harms and advocate for new approaches.
- **Seeking Reparations** through engagement with external stakeholders to achieve recognition of harms caused and compensation and/or assurances of different approaches in the future.

Present

Reflecting on current capacities and experiences of the community is important to inform understandings of the impacts of data and/or data-enabled systems and technologies. This can inform assessments of community needs and interests as well as help communities identify the opportunities and risks associated with ongoing or proposed data projects. Activities might include:

- **Identifying community needs.** Engaging with members of the community, recognising that different individuals or groups within the community may have varied experiences, perspectives, and interests. Engagement can identify current challenges facing the community as well as skills, knowledge and capacities that can be harnessed or that are in need of development. This might identify areas where community-led data projects could address community needs, or it might identify instances where existing data projects are having negative impacts or creating barriers to the community meeting their needs.

- **Scrutinising existing projects** is essential to identify the impacts that data projects are having within the community. Here it is important to consider how different individuals and groups within the community may experience impacts of projects differently (i.e. due to unequal power structures, identity characteristics, or access to resources).

- **Informing policy.** Understanding current needs and experiences of the community is vital to enable community members to engage in policy processes and to advocate for policies which reflect the interests and needs of community members. This can involve critiquing existing policies, engaging in consultations or participatory processes regarding developing policy, or horizon-scanning activities to identify future challenges and opportunities.

Future

Data justice encompasses anticipatory considerations of impacts and benefits of data and/or data-enabled systems and technologies for present and future generations. Therefore, pursuing data justice can involve reflection on the future aspirations of the community. This may encompass short- medium- and long-term visions of data justice. Activities might include:

- **Engaging with proposed projects.** Relating to short- or medium-term futures, the community can engage critically with proposed developments, projects or policies ensuring that these do not reinforce inequitable power structures or exacerbate inequalities and advocating for approaches which take account of community needs and interests.

- **Envisioning the future.** Community engagement activities can seek to identify needs, interests, and aspirations which might be met through future data projects and future initiatives to enrich the skills and knowledge of community members. Engagement activities can also seek to develop approaches which harness the value of data together with the knowledge and experience of the community to address challenges and add value.

Examples of Pillar Touchpoints Across the Community's Past, Present, Future

Time Horizons of Community Life:	**Past** • Community Engagement • Community Mobilisation • Seeking Reparations	**Present** • Identifying Community Needs • Scrutinising Existing Projects • Informing Policy	**Future** • Engaging with Proposed Projects • Envisioning the Future
Power	Interrogate which stakeholders have exercised power in advancing data innovation agendas that have harmed affected communities; Empower communities by pursuing reparations	Identify how power is exercised both on and in our community; Challenge power by collectively scrutinising existing projects and demanding that innovation agendas align with community values and interests	Ensure that proposed policies and technologies will not reinforce inequitable power structures or exacerbate inequalities; Collectively shape future data innovation agendas that benefit the public
Equity	Assess whether past data practice and agendas have enabled or disabled oppression; Secure strengths-based, socially licensed, and community-involving data collection	Scrutinise whether existing systems and policies are reinforcing historically rooted patterns of inequity and discrimination; Influence policy to transform these patterns through collective action	Develop visions of futures of data innovation where community-defined goals and democratically governed data practices advance social justice and the public interest
Access	Mobilise the airing and sharing of past data injustices by making visible historical abuses and patterns of exploitation archived in data	Pursue community engagement as a way to identify the spectrum of material challenges and disadvantages that need to be transformed; Ensure impacted communities have access to the benefits of data work	Collaborate to form a shared vision of what the future flourishing and well-being of your community and its members might look like
Identity	Interrogate whether and where data practices have engaged in harmful categorisations that have misidentified, omitted, or erased members of marginalised groups; Rectify related wrongs	Safeguard that the categorisation and classification of data collected and/or processed about community members accurately reflect the ways in which they self-identify and omit no one	Set up democratic governance mechanisms which will ensure that future processes of data categorisation align with the ways impacted people self-identify and represent themselves

Participation	Mobilise community to confront legacies of data injustice and seek restorative measures that enable restitution and reconciliation; Pursue transformational inclusiveness for all groups	Pursue meaningful involvement in data projects to secure their alignment with community goals and to ensure social licence, public consent, and justified public trust	Come together to collaboratively set the direction of travel for community-led data innovation agendas; Establish processes of community involvement that secure future participatory parity
Knowledge	Interrogate whether and where historically rooted patterns of domination and entrenched power differentials have suppressed or erased local knowledges, skills, and wisdom or community-based insights	Scrutinise scientifically authoritative knowledge claims made about data to hold those with expertise accountable and to ensure that data innovation progresses in alignment with common understandings and wider societal values.	Build accessible mechanisms and resources for community development and enrichment that draw on diverse local knowledges, interdisciplinary insights, practical skills and wisdom, and inclusive dialogue to confront novel technological challenges.

Stakeholder Engagement Process

Stakeholder and community engagement is important to underpin community-led and democratically governed approaches to data justice and can be undertaken in relation to past, present and future considerations around data and the community.

Communities can proactively initiate engagement processes – either within or beyond their collectivities. Additionally, impacted communities may be engaged by developers, policymakers or other stakeholders seeking their input into the design, development, deployment or evaluation of AI/ML projects and data-driven innovation. The role communities play within these engagement processes may be different reflecting the differing scope, objectives and limitations of the process and how it is envisaged and managed. This section of the guide sets out various considerations to be taken on board both in initiating and conducting community-led engagement processes and participating in externally-led engagement processes.

This section is therefore divided into two main sub-sections:

1) **Community-led engagement processes;**

2) **Community participation in externally-led engagement processes**.

1. Community-led engagement processes

Community-led engagement processes can be undertaken for a variety of purposes. For example, they could be aimed at:

- identifying community needs;
- identifying harms that the community has experienced,
- influencing policy or developing plans for future projects within the community.

Engagement processes can also relate to short-, medium- or long-term goals and can be used to both better understand and develop capacities within the community. In the following sections, we refer to the 'focus of engagement processes'. This might be a particular data project, a review of community needs, a policy process, or another area of relevance to the community.

The overarching goal or purpose of the engagement process will shape the approach that is taken and how the process and methods are designed and implemented. We will call this means of cultivating community involvement the **Stakeholder Engagement Process**.

The Stakeholder Engagement Process is comprised of three main steps:

1. **Preliminary Scoping and Stakeholder Analysis:** Identify the focus and outline the main goal(s) of the engagement process; Identify individuals or groups who may be affected by, or may affect, the focus of the engagement, scope potential stakeholder impacts and levels of influence; Identify internal and external stakeholders to engage and evaluate the salience and contextual characteristics of identified stakeholders; Identify who – or what – you aim to influence/impact through the engagement process.

2. **Positionality Reflection:** Evaluate community positionality as related to that of wider stakeholders – taking account of different identities and experiences both within and beyond the community; Consider strengths and limitations presented by community positionality.

Figure 17: Creating meaningfully inclusive dialogue

3. **Stakeholder Engagement Objectives and Methods:** Establish engagement objectives that enable the appropriate degree of stakeholder engagement and co-production in engagement evaluation; Establish methods that support the achievement of defined objectives. There may be different methods used at different stages. For instance, you may use certain methods to conduct engagement internally with community members and a different approach to engage, or influence, external stakeholders.

Key term: Stakeholder

Scholars and practitioners from areas as diverse as public policy, land use, environmental and natural resource management, international development, and public health have offered many different definitions of "stakeholders" over the past several decades. Even so, these definitions have converged around a few common characteristics. Stakeholders are individuals or groups that (1) have interests or rights that may be affected by the past, present, and future decisions and activities of an organisations; (2) may have the power or authority to influence the outcome of such decisions and activities; (3) possess relevant characteristics that put them in positions of advantage or vulnerability with regard to those decisions and activities.

Preliminary Scoping and Stakeholder Analysis

Preliminary Scoping and Stakeholder Analysis is the first activity within the engagement process. It involves three sub-steps:

1. **Outlining the focus and purpose of the engagement process:** Outline a high-level description of the reasons for undertaking the engagement process, establish the main focus of the engagement process (this could, for example, be identifying community needs/interests, engaging with a particular data project, or planning future activities), the contexts or applications to which it relates, and the information that may be needed. During this initial scoping activity, you should draw on existing relevant documents (e.g. community reports, external documentation relating to data projects affecting the community, or policy documents) and desk research (if necessary) to complete the description.

2. **Identifying stakeholders:** Building on this contextual understanding, identify who may be affected by, or may affect, the focus of the engagement process.

Figure 18: Confronting the many layers of potentially harmful impacts of irresponsible data collection and use

3. **Scoping potential stakeholder impacts:** Where your engagement process is focused on grappling with a particular data project, data policy, or an issue or problem related to the effects of data collection and use on your community, carry out a preliminary evaluation of the potential impacts of the project, policy, or issue on affected individuals and groups within your community. To inform this reflection, you should review Annex 1: 12 Principles and Priorities of Responsible Data Innovation, and then consider which of these principles and priorities could be impacted by the project, policy, or issue that is the focus of the engagement process.

4. **Analysing stakeholder salience:** Assess the salience and contextual characteristics of individuals or groups. The purpose of this sub-step is to help you understand the relevance of each identified stakeholder. It does this by providing a structured way for community members to assess the relative interests, rights, vulnerabilities, and advantages of identified stakeholders as these interests, rights, vulnerabilities, and advantages may be impacted by, or may impact, the focus or topic of the engagement process. Relevant stakeholders include both individuals within the community and externally (e.g. in civil society, policy-making, AI/ML development). When considering internal stakeholders, you should account for existing power dynamics within the community and identify which individuals or groups have previously been underrepresented or marginalised. You should also consider stakeholders whose input will strengthen the openness, inclusivity, and diversity of the process. Additionally, you should take into account existing power imbalances and identify which stakeholders (internal and external) you want to influence through the outputs of the engagements. If existing power structures pose challenges for achieving influence and impact seek to identify stakeholders (e.g. civil society or advocacy groups) you could engage with in collaborative or coalition-building activities to increase your influence.

The following table presents a series of prompts and questions pertaining to each of the sub-steps. It is meant to help conduct the Preliminary Scoping and Stakeholder analysis step of the Stakeholder Engagement Process. Note that before you answer the questions pertaining to 'Scoping potential stakeholder impacts' sub-step you should first review Annex 1: 12 Principles and Priorities of Responsible Data Innovation.

Preliminary Policy Scoping and Stakeholder Analysis	
Questions	Responses
Outlining rationale behind the engagement process	
What is its main focus this engagement process?	
What are you trying to achieve in carrying out this engagement process?	
What data contexts, applications, or data-related policy does your engagement process relate to?	
What social justice or data justice issues are most relevant to your engagement process?	
What information do you need to carry out this engagement process?	
Identifying stakeholders	
Who are the stakeholders (both individuals and social groups) that may be impacted by, or may impact, the focus or topic of the engagement process?	
Do any of these stakeholders possess sensitive or protected characteristics that could increase their vulnerability to abuse, adverse impact, or discrimination, or for reason of which they may require additional protections or assistance? If so, what characteristics? Consider characteristics including race, gender, gender reassignment, sexual orientation, religion or belief, age, disability, marriage and civil partnership status, pregnancy.	

Could the focus of the engagement process present significant concerns to specific groups of stakeholders given vulnerabilities caused or precipitated by their distinct circumstances (outside of protected characteristics)?	
If so, what vulnerability characteristics expose them to being jeopardised by policy outcomes?	
Scoping potential stakeholder impacts	
If the focus of your engagement is on a particular data project, data policy, or an issue or problem related to the effects of data collection and use on your community, how, if at all, could each of the twelve principles and priorities be impacted by that project, policy, or issue? • Respect for and protection of human dignity • Interconnectivity, solidarity, and intergenerational reciprocity • Environmental flourishing, sustainability, and the rights of the biosphere • Protection of human freedom and autonomy • Prevention of harm and protection of the right to life and physical, psychological, and moral integrity • Non-discrimination, fairness, and equality • Rights of Indigenous peoples and Indigenous data sovereignty • Data protection and the right to respect of private and family life • Economic and social rights • Accountability and effective remedy • Democracy • Rule of law	
If the focus of your engagement is on grappling with a particular data project, data policy, or an issue or problem related to the effects of data collection and use on your community, how, if at all, could each of the twelve principles and priorities be impacted by that project, policy, or issue?	
How could each of the twelve principles and priorities be advanced or hindered by that project, policy, or issue?	

Analysing stakeholder salience	
How might different affected stakeholder groups be differentially impacted by the focus or topic of your engagement process?	
Which affected stakeholder groups have the greatest needs in relation to potential benefits of your engagement process?	
If the focus of your engagement is on a particular data project, data policy, or an issue or problem related to the effects of data collection and use on your community, which affected stakeholder groups are most likely to be positively impacted by that project, policy, or issue? Which affected stakeholder groups are most likely to be negatively impacted?	
If the focus of your engagement is on a project, policy, or issue, are there any relevant power relations between these differentially impacted stakeholder groups that could affect the distribution of the benefits and risks associated with that project, policy, or issue? Consider their relative advantages and disadvantages, and which affected stakeholders may have direct or indirect influence over the project, policy, or issue and its outcomes.	
If the focus of your engagement is on grappling with a project, policy, or issue, which affected stakeholder groups' influence is limited? How could these limitations impact the distribution of benefits and risks associated with the project, policy, or issue?	

Engaging in Positionality Reflection

All individual human beings come from unique places, experiences, and life contexts that have shaped their thinking and perspectives. Reflecting on these is important insofar as it can help us understand how our viewpoints might differ from those around us and, more importantly, from those who have diverging cultural and socioeconomic backgrounds and life experiences. Identifying and probing these differences can enable community members to better understand how their own backgrounds, for better or worse, frame the way they see others, the way they approach and solve problems, and the way they carry out the policy articulation process. By undertaking such efforts to recognise social position and differential privilege, they may gain a greater

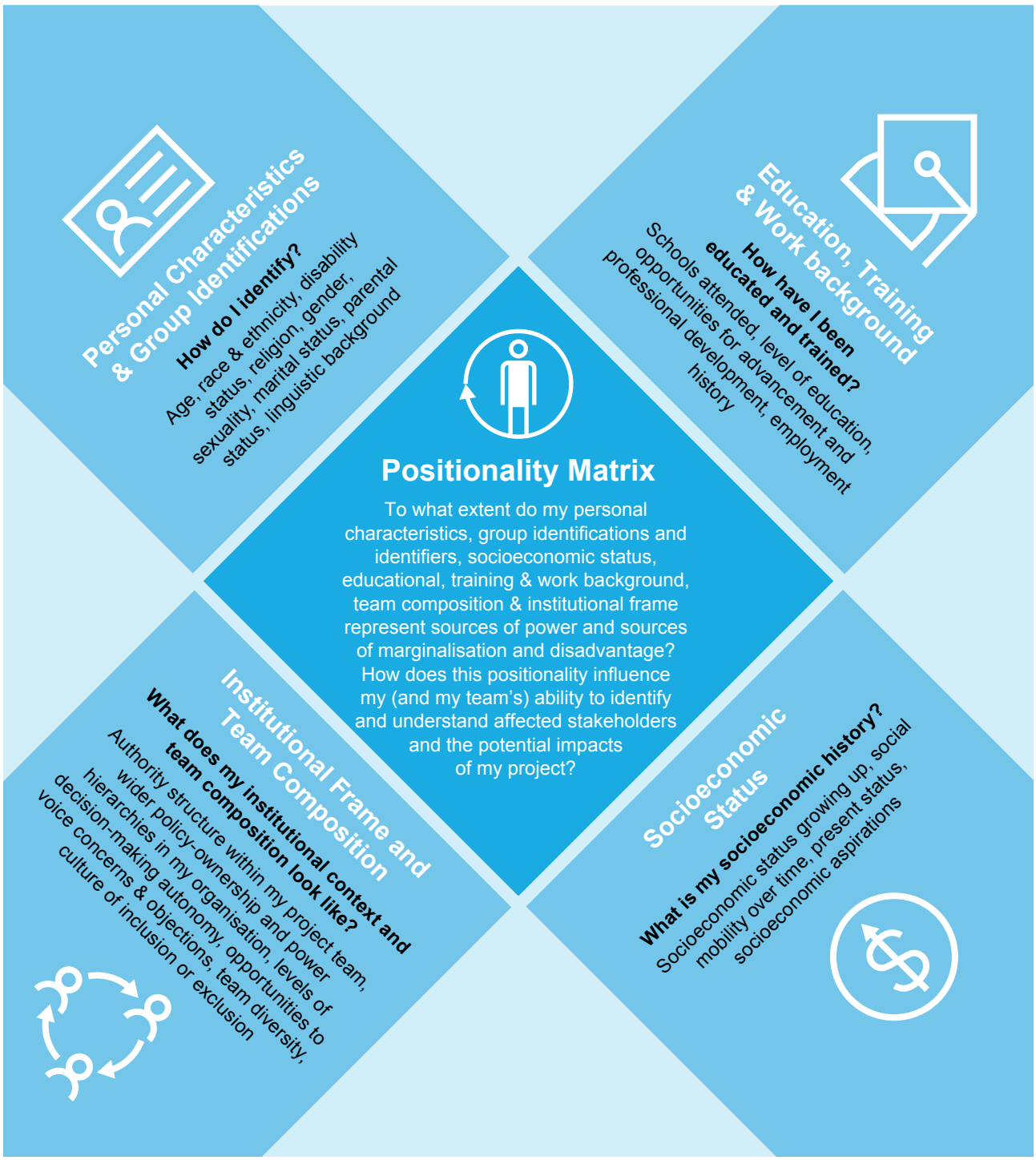


Figure 19: Positionality Matrix

awareness of their own personal biases and unconscious assumptions. This then can enable them to better discern the origins of these biases and assumption and to confront and challenge them in turn. When taking positionality into account, community members should reflect on their own positionality matrix by answers the questions contained in Figure 19.

The process of positionality reflection enables you and your community (1) to identify and understand the varied characteristics and identities of relevant community members and (2) to examine and clarify how individuals within your community may experience impacts differently or have different levels of influence over current activities or processes. This enables you to ensure that engagement processes are inclusive and that outcomes take into account the needs and interests of all community members. Additionally, positionality reflection presents an opportunity to reflect on the extent to which the perspectives and experiences of community members are adequately represented or understood by external stakeholders (e.g. policy-makers or developers).

Reflective questions to consider are:

Positionality Reflection	
Questions	Responses
How does the positionality of community members relate to those of external stakeholders (e.g. policy-makers, developers)?	
How has the positionality of community members shaped your understandings of data justice?	
How might your community's understanding of data justice differ from the ways other stakeholders (e.g. policy-makers or developers) understand and pursue data justice? What are the implications of this for the ways in which you engage with stakeholders?	
In what ways might your position as a community influence your evaluation of the potential negative and positive impacts of the focus of this engagement?	
Are there any ways that your position as a community could limit your perspective when evaluating the impact of the focus of this engagement?	
Are there any ways that your position as a community could strengthen your perspective when evaluating the impact of the focus of this engagement? Consider overlapping identities and experience.	
What (if any) missing stakeholder viewpoints would strengthen your community's assessment of the focus of this engagement?	
To what extent are all individuals or groups within your community represented within engagement processes?	

Stakeholder Engagement Objectives and Methods

Identifying and communicating clear objectives for engagement is vital to set appropriate and realistic expectations and to ensure appropriate engagement and evaluation methods are used.

In this section we discuss different approaches that can be taken in relation to:

a. Engaging community members

b. Engaging external stakeholders to achieve influence/impact

In relation to both forms of engagement key reflection questions to consider are:

- How are you defining your community? What is the rationale behind the criteria of inclusion and exclusion that determines this definition?
- Why are you engaging community members/stakeholders?
- What do you envision the ideal purpose and the expected outcomes of engagement activities to be?
- Ideally, how would community members be able to influence the engagement process and the outcomes?
- What engagement objective do you believe would be appropriate for this process considering challenges or limitations related to positionality, and to the process' potential degree of impact?
- Considering answers to the above questions, what is your established engagement objective?

Avoiding Tokenism

Tokenistic forms of engagement are criticised for doing only enough to satisfy procedural requirements or expectations without leading to meaningful impacts. Stakeholder engagement requires a genuine commitment to listen to stakeholders and to reflect their interests and perspectives in decision-making processes. This extends to the possibility of stakeholder engagement suggesting fundamental changes to planned projects.

A meaningful approach to stakeholder engagement will devolve at least a degree of control over the engagement process and its potential outcomes to participating stakeholders. In particular, impacted communities should be able to influence the engagement process (e.g., methods and approaches) to ensure this is accessible, relevant, and responsive to community interests and needs. Moreover, stakeholder engagement should be facilitated and overseen by an independent party without vested interests in the outcomes.

Wherever possible you should seek opportunities to engage stakeholders through approaches aimed at "Partnering" and "Empowering". If stakeholder engagement is being undertaken purely through methods aimed at "consultation" you must ensure there are mechanisms in place so that the findings of consultations will be acted upon and that outcomes will be communicated to impacted communities.

a. Engaging Community Members

Internal community engagement focusses on engaging people within your community – this might be aimed at identifying shared needs, building capacities, or planning future activities.

Determining Engagement Objectives

All engagement processes can run the risk either of being cosmetic tools employed to legitimate decisions or projects without substantial and meaningful participation or of being insufficiently participative, i.e. of being one-way information flows or nudging exercises that serve as public relations instruments. To avoid such hazards of superficiality, a proportionate approach to engagement is needed with deliberate and precise goal-setting. The objectives of engagement that your community chooses will depend on factors that divide into three categories, which are presented here with accompanying descriptions:

Factors determining the objectives of engagement	
Community-based assessments of risks of adverse impacts	• Assessment of how to make community involvement proportionate to the scope of potential risks, hazards, and adverse impacts of the issue or problem that the engagement seeks to address. For example, if the engagement is about confronting the desirability and justifiability of the use high-stakes biometric identification systems like live facial recognition within a community, more participative and empowering forms of engagement may be most appropriate.
Community-based assessments of positionality	• Evaluation of community positionality—for instance, cases where the identity characteristics of community members leading engagement processes do not sufficiently reflect or represent impacted groups. How can the team "fill the gaps" in knowledge, domain expertise, and lived experience through community participation?
Establishment of community engagement goals	• Determination of engagement objectives that enable the appropriate degree of community engagement and co-production in project evaluation and oversight processes • Choosing participation goals from a spectrum engagement options (informing, partnering, consulting, empowering) that equip your project with a level of engagement which meets team-based assessments of risk and positionality.

When weighing these three factors, you should use the results of your preliminary scoping and stakeholder analysis to establish a clear and explicit engagement objective and document this. **The following table outlines a range of engagement objectives, their means of participation, and the level of agency they support for stakeholders:**

DEGREE OF PARTICIPATION	MEANS OF PARTICIPATION	LEVEL OF AGENCY
INFORM Stakeholders are made aware of decisions and developments.	External input is not sought out. Information flows in one direction. This an be done through newsletters, the post, app notifications or community forums.	LOW Stakeholders are considered information subjects rather than active agents
CONSULT Stakeholders can voice their views on pre-determined areas of focus, which are considered in decision-making.	Engagement occurs through online surveys or short phone interviews, door-to-door or in public spaces. Broader listening events can support consultations.	LOW Stakeholders are included as sources of information input under narrow, highly controlled conditions of participation.
PARTNER Stakeholders and teams share agency over the determination of areas of focus and decision making.	External input is sought out for collaboration and co-production. Stakeholders are collaborators in projects. They are engaged trough focus groups.	MODERATE Stakeholders exercise a moderate level of agency in helping to set agendas through collaborative decision making.
EMPOWER Stakeholders are engaged with as decision-makers and are expected to gather pertinent information and be proactive in co-operation.	Co-production exercises occur through citizens' juries, citizens' assemblies, and participatory co-design. Teams provide support for stakeholders' decision making.	HIGH Stakeholders exercise a high level of agency and control over agenda-setting and decision making.

Determining Stakeholder Engagement Methods

Once engagement objectives have been defined, appropriate methods can be chosen. Determining appropriate engagement methods necessitates that you (1) evaluate and accommodate community members' needs, and (2) pay attention to practical considerations of resources, capacities, timeframes, and logistics that could enable or constrain the realisation of your objective:

Factors determining engagement methods	
Evaluation and accommodation of community needs	• Identification of potential barriers to engagement such as constraints on the capacity of vulnerable community members to participate, difficulties in reaching marginalised, isolated, or socially excluded groups, and the challenges to participation that are presented by digital divides or information and communication gaps. • Identification of strategies to accommodate community member needs such as catering the location or media of engagement to difficult-to-reach groups, providing childcare, compensation, or transport to secure equitable participation, tailoring the provision of information and educational materials to the needs of participants
Practical considerations of resources, capacities, timeframes, and logistics	• the resources available for facilitating engagement activities • the timeframes set for project completion • the capacities of your community to properly facilitate engagement processes

Community members should take a deliberate and reflective approach to deciding on how to balance participation goals with practical considerations. You should also make explicit the rationale behind your choices and document this. **The following table outlines possible engagement methods along with their respective strengths, weaknesses, and relevant engagement objectives:**

Mode of Engagement	Practical Strengths	Practical Weaknesses
newsletters (email) *Regular emails (e.g.: fortnightly or monthly) that contain updates, relevant news, and calls to action in an inviting format.* **Degree of Engagement** INFORM	Can reach many people; can contain large amount of relevant information; can be made accessible and visually engaging.	Might not reach certain portions of the population; can be demanding to design and produce with some periodicity; easily forwarded to spam/junk folders without project team knowing (leading to overinflated readership stats).
Letters (post) *Regular letters (e.g.: monthly) that contain the latest updates, relevant news and calls to action.* **Degree of Engagement** INFORM	Can reach parts of the population with no internet or digital access; can contain large amount of relevant information; can be made accessible and visually engaging.	Might not engage certain portions of the population; Slow delivery and interaction times hampers the effective flow of information and the organisation of further engagement.
App notifications *Projects can rely on the design of apps that are pitched to stakeholders who are notified on their phone with relevant updates.* **Degree of Engagement** INFORM	Easy and cost-effective to distribute information to large numbers of people; Rapid information flows bolster the provision of relevant and timely news and updates.	More significant initial investment in developing an app; will not be available to people without smartphones.

Mode of Engagement	Practical Strengths	Practical Weaknesses
Community fora *Events in which panels of experts share their knowledge on issues and then stakeholders can ask questions.* **Degree of Engagement** INFORM	Can inform people with more relevant information by providing them with the opportunity to ask questions; brings community together in a shared space of public communication.	More time-consuming and resource intensive to organise; might attract smaller numbers of people and self-selecting groups rather than representative subsets of the population; effectiveness is constrained by forum capacity.
Online surveys *Survey sent via email, embedded in a website, shared via social media…* **Degree of Engagement** CONSULT	Cost-effective; simple mass-distribution.	Risk of pre-emptive evaluative framework when designing questions; Does not reach those without internet connection or computer/smartphone access.
Phone interviews *Structured or semi-structured interviews held over the phone.* **Degree of Engagement** CONSULT PARTNER	Opportunity for stakeholders to voice concerns more openly.	Risk of pre-emptive evaluative framework when designing questions; Might exclude portions of the populations without phone access or with habits of infrequent phone use.

Mode of Engagement	Practical Strengths	Practical Weaknesses
Door-to-door interviews *Structured or semi-structured interviews held in-person at people's houses.* **Degree of Engagement** CONSULT PARTNER	Opportunity for stakeholders to voice concerns more openly; can allow participants the opportunity to form connections through empathy and face-to-face communication.	Potential for limited interest to engage with interviewers; time-consuming; can be seen by interviewees as intrusive or burdensome.
In-person interviews *Short interviews conducted in-person in public spaces.* **Degree of Engagement** CONSULT PARTNER	Can reach many people and a representative subset of the population if stakeholders are appropriately defined and sortition is used.	Less targeted; pertinent stakeholders must be identified by area; little time/interest to engage with interviewer; can be viewed by interviewees as time-consuming and burdensome.
Focus groups *A group of stakeholders brought together and asked their opinions on a particular issue. Can be more or less formally structured.* **Degree of Engagement** CONSULT PARTNER	Can gather in-depth information; Can lead to new insights and directions that were not anticipated by the project team.	Subject to hazards of group think or peer pressure; complex to facilitate; can be steered by dynamics of differential power among participants.
Online workshops *Workshops using digital tools such as collaborative platforms.* **Degree of Engagement** CONSULT	Opportunity to reach stakeholders across regions, increased accessibility depending on digital access.	Potential barriers to accessing tools required for participation, potential for disengagement.

Mode of Engagement	Practical Strengths	Practical Weaknesses
Citizen panel or assembly *Large groups of people (dozens or even thousands) who are representative of a town/region.* **Degree of Engagement** INFORM PARTNER EMPOWER	Provides an opportunity for co-production of outputs; can produce insights and directions that were not anticipated by the project team; can provide an information base for conducting further outreach (surveys, interviews, focus groups, etc.); can be broadly representative; can bolster a community's sense of democratic agency and solidarity.	Participant rolls must be continuously updated to ensure panels or assemblies remains representative of the population throughout their lifespan; resource-intensive for establishment and maintenance; subject to hazards of group think or peer pressure; complex to facilitate; can be steered by dynamics of differential power among participants.
Citizen jury *A small group of people (between 12 and 24), representative of the demographics of a given area, come together to deliberate on an issue (generally one clearly framed set of questions), over the period of 2 to 7 days (involve.org.uk).* **Degree of Engagement** INFORM PARTNER EMPOWER	Can gather in-depth information; can produce insights and directions that were not anticipated by the project team; can bolster participants' sense of democratic agency and solidarity.	Subject to hazards of group think; complex to facilitate; Risk of pre-emptive evaluative framework; Small sample of citizens involved risks low representativeness of wider range of public opinions and beliefs;

Community Engagement Objectives and Methods Questions	
Questions	Responses
Engagement Objective	
How are you defining your community? What is the rationale behind the criteria of inclusion and exclusion that determines this definition?	
Why are you engaging community members?	
What do you envision the ideal purpose and the expected outcomes of engagement activities to be?	
Ideally, how would community members be able to influence the engagement process and the outcomes?	
What engagement objective do you believe would be appropriate for this project considering challenges or limitations to assessments related to positionality, and proportionality to the project's potential degree of impact?	
Considering answers to the above questions, what is your established engagement objective?	
Engagement Method	
What resources are available and what constraints will limit potential approaches?	
Which methods meet your community's engagement objective?	
What accessibility requirements might community members have?	
Will online or in-person methods (or a combination of both) be most appropriate to engage salient stakeholders?	
How will you ensure that outputs from the engagement process are accessible to all community members?	
How will you ensure that your engagement method feeds useful information to community members and, where relevant, has impacts on external processes (e.g. policy-making, development of data systems)?	

b. Engaging external stakeholders to achieve influence/impact

Internal community engagement may be followed by activities aimed at influencing external stakeholders or having impact on external projects, policy processes or activities. There are a range of methods that communities can use to do this.

The participation of community members may range from being kept aware, through to collaborating and community organising. These different degrees of participation are summarised in the table below. It is important to note that different members of the community may prefer to participate to varying degrees, however caution needs to be taken to ensure that all members of the community have opportunities to participate and to influence the approaches taken.

Degree of Participation	Means of Participation	Agency
Aware Members of the community learn about decisions and developments within data projects, as well as pre-determined approaches to involvement in said projects.	Wider community input is not sought but rather, they are made conscious of developments.	Members of the community are considered information subjects rather than active agents.
Supporting Members of the community provide time, viewpoints, resources and social capital towards supporting a pre-determined view and approach to involvement in data projects.	Participation occurs through low-entry cost, facilitated activities that may lead to further commitment.	Members of the community participate as sources of support for the maintenance of pre-determined views and approaches to involvement.
Collaborating Members of the community directly contribute to defining views and approaches to involvement in data projects.	Participation occurs through direct involvement in conversations regarding data projects and approaches to involvement.	Members of the community are directly engaged in determining views and approaches to involvement.
Organising Members of the community actively participate in defining and translating views on a data project into approaches to involvement that include action and mobilising others towards participation.	Participation occurs through direct involvement in conversations regarding data projects and approaches to involvement that include action and mobilisation.	Members of the community are directly engaged in determining views and approaches to involvement, as well as involving others in actions that support said views and approaches.

There are a range of methods which can be used to engage with external stakeholders in order to achieve influence and impact. Some of these methods involve working within established structures and political systems whereas others require communities to challenge established structures and work from outside of the political system:

Engaging through established structures

- **Raising Awareness:** Activities to increase understanding of communities needs or the impacts that data projects have had on communities might involve creating websites, producing blog posts, writing articles or letters to the press.
- **Participating in policy/legislative processes:** Communities might respond to formal policy consultations, provide evidence to inquiries or write to elected representatives.
- **Mediation and Arbitration:** Engaging a third party to settle disputes relating to data injustices experienced by the community.

Engaging through challenging established structures

- **Protest:** Communities might choose to draw attention to instances of data injustice through organising protests, potential methods include marches and rallies, boycotts and distribution of leaflets.
- **Direct action:** Activities aimed at highlighting instances of data injustice and disrupting the activities of organisations responsible include sit-ins, strikes, blockades, or other forms of civil disobedience.

Engaging External Stakeholders Methods Questions	
Questions	Responses
What mechanisms and opportunities currently exist to engage with existing stakeholders? And, what are the strengths and limitations of these?	
What resources are available and what constraints will limit potential approaches?	
Which organisations or groups share interests with your community, and how might coalitions or collaborations be established to increase the community's influence?	
What is the nature of the intended engagement - i.e. will it challenge, support, or scrutinise stakeholder activities?	
To what extent do you anticipate external stakeholders to be resistant or receptive? (N.B. Here it is important to base this assessment on evidence and experience rather than speculation).	
How will you take account of different stakeholders' understandings of data justice, and how will you articulate your understanding of data justice?	

2. Participating in Externally-Led Engagement Processes

Policymakers, developers or other stakeholders may initiate stakeholder engagement processes and invite impacted communities to participate in order to inform design, development, deployment, or evaluation of data projects or data-enabled systems. Done well, this can be a valuable opportunity for community members to influence projects or policies affecting them. This section sets out a number of considerations to inform your community's approach to engaging in these activities in order to maximise the value and impact of your participation.

Clarify objectives, scope and purpose

Any organisation seeking to engage community members should clearly communicate the objectives, scope, and purpose of stakeholder engagement. Before participating you should seek clarification on:

- Why is the stakeholder engagement process being undertaken?
- Which stakeholders are being included in the process and how have they been identified?
- What is the potential scope of impact for the engagement (i.e. to what extent is stakeholder engagement likely to lead to changes in projects/policies)?
- What are the expected outcomes of the engagement, and is there scope for these to be adapted/challenged by participating stakeholders?

Positionality Reflection

Organisations and teams conducting stakeholder engagement ought to have engaged in their own process of positionality reflection in order to inform their stakeholder analysis. When your community is invited to participate, it will be valuable to seek clarification on:

- Why has your community been identified as a salient stakeholder group?
- How has the organisation characterised your community and does this accurately represent the identities of community members?
- What measures/actions will the organisation take to adapt engagement processes to ensure accessibility and relevance to community members?
- To what extent does the approach taken address existing inequities or power asymmetries?
- Are other relevant communities also included?

Before participating in externally-led engagement processes, those members of your community who are considering participation should themselves also undertake a process of positionality reflection. Through this process, community members can reflect on their own positionality matrix by answering the questions contained in the graphic presented in the previous section.

The process of positionality reflection enables you and members of your community to identify and understand the varied characteristics and identities of community members and how individuals within your community may experience impacts differently or have different levels of influence over current activities or processes. This enables you to ensure that community participation in externally-led engagement processes is inclusive and represents the range of interests, experiences and perspectives of community members.

Additionally, positionality reflection presents an opportunity to reflect on the extent to which the perspectives and experiences of community members are adequately represented or understood by external stakeholders (e.g., policymakers or developers).

Responding to and challenging methods used

As outlined above in relation to community engagement methods, there are a range of engagement methods which may be used, reflecting different rationales and approaches to stakeholder engagement.

Before participating in stakeholder engagement processes you should seek clarification on the methods to be used and the extent to which your community's participation will lead to meaningful impacts. Where possible you should seek opportunities to engage through approaches aimed at "Partnering" and "Empowering". If stakeholder engagement is being undertaken purely through methods aimed at "consultation" you should seek assurance that the findings of the consultation will be acted upon and that the findings and outcomes will be communicated to the community.

It is also important to communicate any accessibility requirements or adjustments which may be needed to enable the full and equal participation of all community members.

Seek clarification on the following questions:

- To what extent can community members influence the engagement process (e.g., methods and approaches) to ensure this is accessible, relevant, and responsive to community interests and needs?
- What are the anticipated impacts of engagement methods?
- Who is facilitating stakeholder engagement and to what extent are they independent of interested parties?
- How, and by whom, is the stakeholder engagement process being evaluated?
- How will accessibility requirements be accommodated?
- How will outputs and impacts of stakeholder engagement be communicated and demonstrated?
- Will community members have a role in reviewing outcomes from the engagement process?

Guiding Questions

This section will focus on providing guiding questions which draw from the six pillars of data justice. These questions are intended to support you and your community in gaining a broader understanding of how to promote equitable, freedom-promoting, and rights-sustaining data collection, governance, and use as well as how to advance the 2030 Sustainable Development Goals.

It is important to note that these guiding questions are meant to be used as ***reflective tools*** to help make you and your community aware of relevant elements of data justice and responsible and equitable data innovation practices and to prompt the reader to think differently and more critically about data practices by highlighting the data justice pillars in question form. The questions will therefore sometimes not assume or expect that you have a direct answer for the issue raised. Rather the questions are encouraging you to try to find a way to get that information or to pursue the initiative to improve equity, access, participation, etc. suggested in the question. For instance, a guide question might ask you to identify the interests of actors who control access to digital infrastructure (connectivity, computing resources, and data assets) and to think about the power imbalances that exist between these actors and members of your community. Much of this information may be less-than-obvious, hidden, obscured, or even opaque. Raising these issues, however, is intended to provide a starting point for further examination and action—and, where this information is more ready-to-hand, to motivate the opening of critical paths towards challenging power and advancing data justice.

Guiding Questions for the Data Justice Pillars

Power

Interrogate and critique power

- What actors hold power and influence over the collection and use of data in my community?
  - What are their interests (both stated/manifest and implicit) in collecting and using these data? How are these interests similar to, or different from, my interests and those of my community?
  - What, if any, power imbalances exist between these actors and those in my community?
  - What is the history of these power imbalances?
  - How, if at all, do these imbalances result in unjust exercises of power over my community?
  - Are there democratic processes or mechanisms of community empowerment and action in place that enable the confrontation of these power imbalances?

- What actors control access to digital infrastructure (connectivity, computing resources, and data assets) in my community?
  - What regional, cultural and/or political perspectives and priorities do these actors reflect or compel in their provision of infrastructural goods and services?
  - What are their interests (both stated/manifest and implicit) in controlling this access? How are these interests similar to or different from my interests and those of my community?
  - What, if any, power imbalances exist between these actors and those in my community?
  - What is the history of these power imbalances?
  - How, if at all, do these imbalances result in unjust exercises of power over my community?
  - Are there democratic processes or mechanisms of community empowerment and action in place that enable the confrontation of these power imbalances?

- What actors control or influence the standards, governance, and regulatory regimes through which the rights and freedoms of members of my community are legally protected in the context of data collection and use?
  - What are their interests (both stated/manifest and implicit) in controlling or influencing these regimes? How are these interests similar to or different from my interests and those of my community?
  - What, if any, power imbalances exist between these actors and those in my community?
  - What is the history of these power imbalances?
  - How, if at all, do these imbalances result in unjust exercises of power over my community?
  - Are there democratic processes or mechanisms of community empowerment and action in place that enable the confrontation of these power imbalances?

- What actors (in both public and private sectors) control how the benefits and risks of data collection and use are distributed among impacted individuals and groups?
  - What are their interests (both stated/manifest and implicit) in controlling this distribution of benefits and risks? How are these interests similar to or different from my interests and those of my community?
  - What, if any, power imbalances exist between these actors and those in my community?
  - What is the history of these power imbalances?
  - How, if at all, do these imbalances result in unjust exercises of power over my community?
  - Are there democratic processes or mechanisms of community empowerment and action in place that enable the confrontation of these power imbalances?

- How, if at all, does the data collection which impacts my community—and who is included or excluded from those datasets—maintain existing power relations?
  - How, if at all, do these power relations stand in the way of progress in social justice?

- In what ways, if at all, does the use of these datasets enable oppression or preserve harmful relations of power?

Challenge Power and Empower People

- What means are available to members of my community to mobilise against existing power imbalances and unequal power structures that manifest in the data innovation ecosystems?

- Are there any new ways of community empowerment and democratic action that can be envisioned to support actionable challenges to existing power imbalances?

- Beyond realizing greater degrees of data justice and digital equity, what would liberation from these power structures look like for my community? What possibilities for individual and collective flourishing could be opened through the transformation of existing power imbalances?

- Are other people in my community or in other communities mobilizing against these or similar power structures?

- If so, how could we form mutually supportive coalitions to advance mobilization?

- How might we engage with individuals working in developing these systems to mobilize against these power structures?

- Are there forms of community-led data collection and/or use which can challenge unequal power structures?

Equity

Issues of equity should be confronted by developers and organisations at the earliest stage of project planning and should inform whether data innovation practices are engaged in at all

- Consider the forms of data extraction, data processing, and data-driven automation that impact your life and your community. You can focus either general issues or problems related to the effects of data collection and use on you and your community or on a particular data project or data policy.
  Ask the following questions:
  - Are choices made by technology developers and implementers to acquire and use data equitable, ethical, and justifiable?
  - Do these choices advance the wellbeing of my community and its members? Do they safeguard individual dignity and autonomy as well as social solidarity, interpersonal connection, and democratic agency?
  - Do they align with human rights and fundamental freedoms?
  - Do these choices advance a more equitable and just society or do they exacerbate existing inequalities and patterns of discrimination?
  - Do these choices preserve or combat harmful relations of power?
  - Have transparent processes occurred, on the part of data collectors, processors, and users, to air and communicate the rationale behind their choices to build and use data systems?
  - Have assessments of the potential adverse or beneficial social and ethical impacts of these choices to acquire and use data been made public?
  - Have affected individuals and communities been engaged and involved in such impact assessments?
  - Where such evaluative processes and impact assessments have either not occurred or not been made public, how can members of my community demand transparency and effective remedy for these deficits?

- Consider the role that practices of data extraction, data processing, and data-driven automation play in your community. Ask the following questions:
  - How have data-practices been introduced into my community?
  - Has this been done with public consent, community involvement, and social license?
  - Was my community able to contest the implementation of these data practices?
  - How may I promote public dialogue into the underlying cultural and political assumptions of the data systems that have been introduced into my community?

Focus on the transformative power of data equity

- In what ways can members of my community act collectively to oblige those with power and influence over data collection and use to redress and transform the patterns of domination and entrenched power differentials that produce data injustices?

- How can members of my community act collectively to oblige those with power and influence over data collection and use to respond to the demands for rectification of those who have been harmed or marginalised by existing socioeconomic structures?

Pursue measurement justice and statistical equity

- Are decisions about data collection, labelling and categorisation made publicly available to my community? If not, how can members of my community act collectively to oblige those with power and influence over data collection and use to provide this information?

- How can my community get involved in the planning and implementation of data systems, so that:
  - Statistical measurement and automation is equitable and helps promote our interests?
  - My community is safeguarded against data over-collection and negative and discriminatory categorisation?
  - Data collectors, developers and implementers consider and support my community's developmental, physical, cognitive, social and emotional needs?
  - Data collectors, developers and implementers focus on using data about marginalised, vulnerable, and historically discriminated against groups in a way that advances social justice, draws on their strengths rather than primarily on perceived weaknesses, and approaches analytics constructively with community-defined goals that are positive and progressive rather than negative, regressive, or punitive?

- What opportunities are there for my community to be involved in the planning and implementation of data systems so that these are informed by community-led objective setting, problem formulation, and out come definition as well as multi-stakeholder and interdisciplinary approaches to model planning and implementation?

Combat any discriminatory forms of data collection and use that centre on disadvantage and negative characterisation

- In what ways, if at all, are representations of my community (or groups within it) in data systems focused on negative characteristics like disparity, deprivation, disadvantage, dysfunction, and difference (the "5 D's")?

- Do these systems reinforce or enable existing social hierarchies and power dynamics that marginalise groups who are negatively characterised?

Access

Confronting questions of equitable access involves starting from real-world problems of material inequality and structural injustice

- What are the existing sociohistorical, economic, and political conditions of injustice that are experienced by my community? (Consider circumstances of material deprivation, inequality, institutional and structural discrimination, and maldistribution of resources and social goods.)
- What are the histories of these injustices? Have they developed or become entrenched across generations? Which groups within my community have they impacted the most?
- How, if at all, do these conditions inform disparate access to the benefits of data collection and processing?
- How, if at all, do existing distributions of benefits and risks from data processing lead to a furthering of the material conditions of injustice experienced by my community?
- How, if at all, are data collectors, developers, and implementers supporting efforts for recognising and rectifying these injustices? How would my community want developers to address these problems? How can members of my community act collectively to oblige those with power and influence over data collection and use to prioritise the rectification of these injustices by addressing the material conditions of data justice?
- How, if at all, are policies, standards, law, and regulation supporting efforts for recognising and rectifying these injustices?
- How would my community want policies, standards, law, and regulation to address these problems?
- How can members of my community act collectively to oblige policymakers to prioritise the rectification of these injustices by addressing the material conditions of data justice?

Equitably open access to data through responsible data sharing

- Do I have knowledge of who collects and uses my personal data? Can I access these data and have a say on how they are utilised? If not, what steps can I take to gain this knowledge, access, and control?
- Does my community have knowledge of who collects, aggregates, and uses its data?

- Does my community have access to and control over its aggregated data? If not, how can this knowledge, access, and control be obtained?

- Does my community understand, trust, and agree with the data protection, privacy, safety, security, and impact mitigation protocols that govern the sharing of its data?

- Do asymmetries in knowledge, access, and control over data and its use mean that my community's data can be used to advance research, innovation, commerce and policy which does not serve the interests of my community?

- Are there ways in which community rights to access aggregate data could be used to leverage collective power against large data holders?

- How could the provision of digital infrastructure (connectivity, computing resources, and data assets) and the collection and use of data increase the scope of my community's possible opportunities to realize its capabilities for wellbeing, flourishing, and the actualisation of their potential:
  - o through the direct benefits of data systems?
  - o through the improvement of the personal, socioeconomic, and environmental conditions required to realizing these capabilities in practice?

- How may policies, standards, law, and regulation prevent data practices from creating or exacerbating existing obstacles to realizing its capabilities?

Equitably advance access to the capabilities of individuals, communities, and the biosphere to flourish

- Does the distribution of benefits and risks that derive from the provision of digital infrastructure (connectivity, computing resources, and data assets) and the collection and use of data afford me and members of my community capabilities to live a dignified, full, and healthy life and to flourish?

- How can the collective action of my community prevent data practices from creating or exacerbating existing obstacles to impacted communities for realising their capabilities?

- How can my community shape data projects and policies that prioritise individual, community, and biospheric well-being?

- How can my community shape data innovation and policy agendas which demand that data collection and use be considered in terms of the affordances they provide for the ascertainment of well-being, flourishing, and the actualisation of individual and communal potential for these?

- What educational and engagement mechanisms could be put in place through the collective actions of my community to encourage an inclusive understanding of human, societal, and biospheric well-being that incorporates Indigenous notions of the fullness, creativity, harmony, and flourishing of human and biospheric life (like the Maori commitment to Manaakitanga or well-being nourished through communal relationships, the African commitment to Ubuntu, and the commitment of the Abya Yala Indigenous traditions of Bolivia and Ecuador to 'living well"' or sumak kawsay in Quechua, suma qamaña in Aymara, or buen vivir in Spanish)? (See Annex 1 for more details on these concepts)

Confronting questions of equitable access involves four dimensions of data justice

- How can my community initiate and undertake collective action that ensures individuals and communities impacted by data collection and use realise all four dimensions of data justice? Specifically, how can we advance data innovation and policy agendas that
  - Ensure the equitable distribution of the social goods and obligations, burdens and opportunities, risks and benefits, and rights and privileges that emerge from data collection and use? (distributive justice)
  - Ensure the material preconditions necessary for the universal realisation of the potential for human flourishing? (capabilities-centred social justice)
  - Establish the equal dignity and autonomy, and the equal moral status, of every person through the affirmation of reciprocal moral, political, legal, and cultural regard? (representational and recognitional justice)
  - Ensure that past wrongs are rectified through reparation, reconciliation, and meaningful dialogue? (restorative and reparational justice)

Promote the airing and sharing of data injustices across communities through transparency and data witnessing

- In what ways can the digital technologies and practices of data extraction that impact my community expose or make visible potential injustices and harms done to its members? (For instance, abusive behaviour captured by a social media platform making online harm visible; or data collected by a social service agency making discriminatory practices of racial targeting or profiling visible)

- How can my community draw on these forms of data witnessing to expose and challenge injustices?

- What support mechanisms would encourage my community to share its experiences of injustice captured by data witnessing in a context which fosters empowerment?

- Is my community able to share experiences of injustice captured by data witnessing so that other communities have access to this information?

Promote the airing and sharing of data injustices across communities through transparency

- How can my community shape data innovation and policy agendas which safeguard that practices of data collection, processing, and use are sufficiently transparent to ensure that impacted people have access to information needed to understand and challenge injustices in said practices?

- How can my community shape data innovation and policy agendas which that ensure sufficient levels of process, outcome and institutional transparency?

Identity

Interrogate, understand, and critique harmful categorisations

- Do data collected and/or processed about me or members of my community accurately reflect the ways in which I or members of my community self-identify?

- Are data used to classify me, or members of my community, in ways that harm our identity claims (i.e. the ways we self-identify) or that limit/negatively impact our access to goods, services, or public benefits?

- What strategies can I, and members of my community, put in place to recognise and rectify instances of data collection, processing, and use where categorisations of our sensitive identity characteristics (such as race, gender, sex, or religious affiliation) are harmful, racialising, misgendering, or otherwise discriminatory?

- In cases where such harmful categorisations arise, are there longer histories of discriminatory categorisation or racialisation that are reflected in current practices, and how can these be critically scrutinised, exposed, and questioned?

- Do I, and members of my community, have opportunities to contest or correct data relating to aspects of our identities? If not, how can I and members of my community mobilise to ensure the opportunity for this kind of data correction?

Challenge erasure

- What strategies can I, and members of my community, put in place to recognise and rectify instances of data collection, processing, and use where categorisations or the grouping of categories erase elements of our identity that we value?
  - For instance, the designers of a data system may group together a variety of non-majority racial identities under the category of “non-white” or a data system may record gender only in terms of binary classification and erase the identity claims of non-binary and trans people.

- What strategies can I, and members of my community, put in place to recognise and rectify instances of data collection, processing, and use that disparately injure people who possess intersectional characteristics of identity which render them vulnerable to harm?
  - For instance, a facial recognition system could be trained on a dataset that is primarily populated by images of white males, thereby causing the trained system to systematically perform poorly for darker skinned females. If the designers of this system have not taken into account the vulnerable intersectional identity (in this case, darker skinned females) in their development, bias mitigation and performance testing activities, this identity group becomes invisible and so too do injuries done to its members.

Participation

Democratise data work and govern data democratically

- How can members of my community mobilise to increase its agenda-setting and decision-making agency around the practices of data collection, processing, and use that impact them?

- How can members of my community participate in articulating collective visions for the direction that the data innovation agendas that impact them should take?

- How can members of my community become agenda setters, policy initiators, and standards setters for the governance of the data practices that impact them?

- What are the practical and material requirements for members of my community to be able to participate in the governance of data practices?
  - What resources are needed?
  - What kinds of upskilling and development of technical, ethical, and policy literacy are needed?
  - What kinds of communication and participation infrastructure are needed?
  - Considering the potential vulnerabilities experienced by the variety of identities and contexts present within the community, what are the accessibility requirements for community members to participate (methods, formats etc)?

- How can members of my community come together to assess and determine which sorts of data practices are to be deemed as unacceptable and which sorts are to be deemed as permissible or desirable?

- How can members of my community come up with agreed criteria for evaluating whether data practices are acceptable, permissible, or desirable?

- How can members of my community leverage the power of collective participation to create more opportunities for our visions of just and equitable data practices to be implemented?

Challenge existing, domination-preserving modes of participation

- How do current logics and justifications of data practices reinforce or institutionalise prevailing power structures and hierarchies and how can members of my community engage in the interrogation of these structures and hierarchies? (Refer to the power pillar for further direction)

- In what ways could the options for my community's participation in data innovation ecosystems and their governance operate to normalise or support existing power imbalances and the harmful data practices that could follow from them?

- How can members of my community engage in critical refusal to participate in data innovation ecosystems and in their governance where such participation would normalise or support existing power imbalances and the harmful data practice that could follow from them?

Ensure transformational inclusiveness rather than power-preserving inclusion

- How can I ensure that, where opportunities arise for the inclusion of me or members of my community in data innovation practices and policymaking processes related to data standards and governance, that the terms of inclusion are equitable, symmetrical, and equality-promoting?

- How can I ensure, in these instances, that the inclusion of me or members of my community is not normalising or supporting existing power imbalances in ways that could perpetuate data injustices and fortify unequal relationships?

- How can I, and members of my community, develop critical approaches to the term "inclusion" that ensure its use does not reproduce power hierarchies and that detect where its use may represent "virtue signalling," insincerity, or duplicity?

Knowledge

Embrace the pluralism of knowledges

- How can I, and members of my community, safeguard that our own unique ways of seeing, understanding, and being in the world—especially in our lived experience of data innovation—inform and are respected in the practices of data collection, processing and use that impact us?

- How can I and members of my community safeguard that our own unique ways of seeing, understanding, and being in the world—especially in our lived experience of data innovation—inform and are respected in the policymaking practices surrounding the governance of data technologies?

- How might we draw on our own unique ways of seeing, understanding, and being in the world—especially in our lived experience of data innovation—to open new paths to the societal benefits of data use and to optimise its value across society in ways which take account of the needs, interests, and concerns of all affected communities?

Challenge the assumed or unquestioned authority of technical, professional, or "expert" knowledge across scientific and political structures

- What actions can I, and members of my community, take to ensure that the processes of knowledge creation in data science and innovation, which affect us, are recognised as social processes that require rational scrutiny and wider public engagement?

- How can we hold the "expertise" behind this knowledge creation to account and ensure that data science and innovation progress in ways which align with wider societal values?

- How can we demand the clear and accessible public communication of research and innovation purposes/goals and data analytic and scientific results, so that we can interrogate the claims and arguments being put forward to justify data-driven decision-making and data innovation agendas?

- What kinds of upskilling, knowledge development, and resources do members of my community need to be prepared to receive, understand, rationally scrutinise the public communication of research and innovation purposes/goals and data analytic and scientific results?

Prioritise interdisciplinarity and pursue a reflexive and positionally aware objectivity that amplifies marginalised voices

- How can I, and members of my community, pursue understandings of data innovation environments—and of the sociotechnical processes and practices behind them— that are informed by a plurality of methods and perspectives (which draw on insights from many credible sources and academic disciplines)?

- How can we integrate our lived experience with a wide range of academic and specialised knowledges, enabling an appreciation and incorporation of a wide range of insights, framings, and understandings?

- How can we question claims of objectivity, impartiality, and neutrality that mask privilege and the privileged interests of dominant groups?

Cultivate intercultural sharing, learning, and wisdom

- In what ways can I, and members of my community, incorporate insights, learning, and wisdom from a diverse and inclusive range of sociocultural groups—especially as these insights, learning, and wisdom might inform the values, beliefs, and purposes behind data research and innovation agendas and practices?

- How can we set up or tap into networks of communication and collaboration with other communities and sociocultural groups, so that we can come together to cultivate shared understandings and constructively explore differences?

- How can we draw on the principles and priorities of data justice to find commonality and build solidarity with other communities and sociocultural groups?

- How can we draw on cumulative wisdom, potentially shared with other communities and sociocultural groups, that has been ascertained through similar social or political struggles for recognition and justice?

Sustainable Development Goals

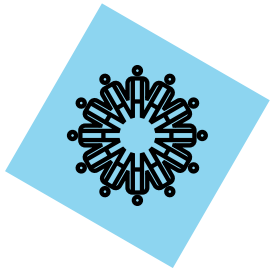
- Do data collected to identify or measure the relevant SDG reflect real-world levels or instances of this challenge in my community?
  - Do members of my community have access to this data?
- Are there opportunities for me and members of my community to contribute their knowledge and insights from lived experience into or data-enabled initiatives/polices relating to the SDGs?
- Are the interests and needs of my community taken into consideration in the design, development, and implementation of new data-enabled initiatives or polices relating to each respective SDG?
- Do data-enabled tools or systems used to achieve one of the SDGs (i.e. improve health outcomes, increase access to education) have positive or negative impacts on my community?
- Do members of my community have opportunities to use, contest or correct data related to achieving the SDGs, or one SDG in particular?

Annex 1: 12 Principles and Priorities of Responsible Data Innovation

The information contained below serves as background material to provide you with a means of accessing and understanding some of the existing human rights, fundamental freedoms, and value priorities that could be impacted by the use of AI technologies. A thorough review of this table and an engagement of the links to the relevant Charters, Conventions, Declarations, and elaborations it contains is a critical first step that will help you identify the salient rights, freedoms, and values that could be affected by your project. You should also explore whether your organisation has engaged in any previous impact assessments (data protection impact assessment, equality impact assessment, ethical and social impact assessment, environmental impact assessment, etc.)—and review these where they are present.

Principles and Priorities	Corresponding Rights and Freedoms with Selected Elaborations	Resources for Principles and Priorities and Corresponding Rights and Freedoms
Respect for and protection of human dignity 	All individuals are inherently and inviolably worthy of respect by mere virtue of their status as human beings. Humans should be treated as moral subjects, and not as objects to be algorithmically scored or manipulated. - The right to human dignity, the right to life and the right to physical, mental and moral integrity - The right to be informed of the fact that one is interacting with an AI system rather than with a human being - The right to refuse interaction with an AI system whenever this could adversely impact human dignity	**Universal Declaration of Human Rights:** - Preamble, Universal Declaration of Human Rights – Dignity International Covenant on Civil and Political Rights: - Article 6, International Covenant on Civil and Political Rights – Right to life **European Convention on Human Rights (ECHR):** - Article 2, European Convention on Human Rights – Right to life - Article 2, 'Guide on Article 2 of the European Convention on Human Rights', Council of Europe – Right to life **African Commission on Human and Peoples' Rights** 473 Resolution on the need to undertake a Study on human and peoples' rights and artificial intelligence (AI), robotics and other new and emerging technologies in Africa – ACHPR/Res. 473

Interconnectivity, solidarity, and intergenerational reciprocity



All humans are interconnected to a greater whole, which transcends time and thrives when all its constituent parts are enabled to thrive. This unbounded bond of solidarity extends from the closest relationship between kin to the living totality of the biospheric whole. Membership in this greater community also places a responsibility on the present generation to take account of the well-being and flourishing of future generations. Intergenerational reciprocity involves looking backward in considering the wisdom and learning of past generations and looking forward in considering the rights and well-being of lives not yet lived (two, four, seven, or more generations in the future).

- The right of future generations to due moral regard and consideration

- Kaitiakitanga (Maori): The responsibility to ensure sustainable futures for the biosphere and for people, families, communities, and humanity

- Manaakitanga (Maori): The responsibility to extend care, compassion, hospitality, and generosity to all others including strangers and the environment.
  Shared Manaakitanga supports well-being, dignity, and the stewardship of healthful and spiritual living.

UNESCO:

-III.1 Values, Recommendation on the Ethics of Artificial Intelligence, Living in peaceful, just and interconnected societies

Other resources:

The Maori Report, Independent Maori Statutory Body

Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT, 2020

The World People's Conference on Climate Change and the Rights of Mother Earth, Bolivia 2010

The Constitution of the Iroquois Nations, 1916

What is Ubuntu?, Desmond Tutu 2013

I am because you are, Michael Onyebuchi Eze, UNESCO 2011

	- The Seventh Generation Principle (Haudenosaunee Confederacy, Iroquois): Give regard to the well-being of the seventh generation ahead of you in your practices, works, actions, and deliberations and draw on the experience and wisdom of the seventh generation that came before - The values of Ubuntu (Sub-Saharan Africa): Ethical life is measured by the meaningful relationships formed by each individual with an interconnected and interdependent whole of people, community, and environment. One's humanity is affirmed by connecting with and taking care of others and by recognising their dignity in works, deliberations, and deeds.	
Environmental flourishing, sustainability, and the rights of the biosphere 	All humans draw oxygen from the Earth's air, draw nourishment from its soil, and live as interconnected parts of a living biospheric community. The interrelated organisms of this unbounded community share a common origin, a common history, and a common ecological fate. Members of humanity, as benefactors and inheritors of such a circle of life and of the life-giving gifts of the earth, should seek practices of living that secure environmental flourishing, sustainability, and the rights of the biosphere. These practices of living should aim for a harmony and balance with the interdependent ecologies of the biosphere in solidarity with it. They should also respect nature's right to flourish, to endure, and to regenerate life without harmful anthropogenic influence.	**UNESCO:** - III.1 Values, Recommendation on the Ethics of Artificial Intelligence, Environment and ecosystem flourishing **Other resources:** The Constitution of Ecuador, 2008 17 Principles of Environmental Justice, First National People of Colour Environmental Leadership Summit 1991 Bali Principles of Climate Justice, 2002 The Maori Report, Independent Maori Statutory Body Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT, 2020

	All people involved in AI/ML and data innovation lifecycles should prioritise environmental flourishing, sustainability, and the rights of the biosphere, ensuring that they use the affordances of technology to do battle with climate change and biodiversity drain rather than contribute to them. - The right of Pachamama: 'Nature or Pachamama, where life is reproduced and exists, has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes of evolution'. (Article 1, Constitution of Ecuador) - Sumak kawsay (Quechua), suma qamaña (Aymara), buen vivir (Spanish): "living well" or "collective well-being" but also the priority of a shared pursuit of the fullness, creativity, harmony, and flourishing of human and biospheric life. - Kaitiakitanga (Maori): The responsibility to ensure sustainable futures for the biosphere and for people, families, communities, and humanity - ' Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction'. (First National People of Colour Environmental Leadership Summit)	The World People's Conference on Climate Change and the Rights of Mother Earth, Bolivia 2010 The Albuquerque Declaration, Native People-Native Homelands Climate Change Workshop-Summit, Albuquerque, New Mexico, 1998

Protection of human freedom and autonomy

Humans should be empowered to determine in an informed and autonomous manner if, when, and how AI/ML and data-intensive systems are to be used. These systems should not be employed to condition or control humans, but should rather enrich their capabilities.

- The right to liberty and security
- The right to human autonomy and self-determination
- The right not to be subject to a decision based solely on automated processing when this produces legal effects on groups or similarly significantly affects individuals
- The right to effectively contest and challenge decisions informed and/or made by an AI system and to demand that such decisions be reviewed by a person
- The right to freely decide to be excluded from AI-enabled manipulation, individualised profiling, and predictions. This also applies to cases of non-personal data processing
- The right to have the opportunity, when it is not overridden by competing legitimate grounds, to choose to have contact with a human being rather than a robot

Universal Declaration of Human Rights:

- Article 3, Universal Declaration of Human Rights – Right to life, liberty, and the security of person
- Article 18, Universal Declaration of Human Rights – Right to freedom of thought, conscience, and religion
- Article 19, Universal Declaration of Human Rights – Right to freedom of opinion and expression

African Commission on Human and Peoples' Rights

473 Resolution on the need to undertake a Study on human and peoples' rights and artificial intelligence (AI), robotics and other new and emerging technologies in Africa - ACHPR/Res. 473

International Covenant on Civil and Political Rights:

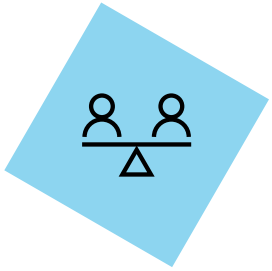
- Article 9, International Covenant on Civil and Political Rights – Right to liberty and security of person
- Article 18, International Covenant on Civil and Political Rights – Right to freedom of thought, conscience, and religion
- Article 19, International Covenant on Civil and Political Rights – Freedom of expression

European Convention on Human Rights (ECHR):

- Article 5, European Convention on Human Rights – Right to liberty and security
- Article 5, 'Guide on Article 5 of the European Convention on Human Rights', Council of Europe – Right to liberty and security
- Article 9, European Convention on Human Rights – Freedom of thought, conscience, and religion

		- Article 9, 'Guide on Article 9 of the European Convention on Human Rights', Council of Europe – Freedom of thought, conscience, and religion - Article 10, European Convention on Human Rights – Freedom of expression - Article 10, 'Guide on Article 10 of the European Convention on Human Rights', Council of Europe – Freedom of expression
Prevention of harm and protection of the right to life and physical, psychological, and moral integrity 	The physical and mental integrity of humans and the sustainability of the biosphere must be protected, and additional safeguards must be put in place to protect the vulnerable. AI and data-intensive systems must not be permitted to adversely impact human well-being or planetary health. - The right to life and the right to physical and mental integrity - The right to the protection of the environment - The right to sustainability of the community and biosphere	**European Convention on Human Rights (ECHR):** - Article 2, European Convention on Human Rights – Right to life - Article 2, 'Guide on Article 2 of the European Convention on Human Rights', Council of Europe – Right to life

Non-discrimination, fairness, and equality



All humans possess the right to non-discrimination and the right to equality and equal treatment under the law. AI and data-intensive systems must be designed to be fair, equitable, and inclusive in their beneficial impacts and in the distribution of their risks.

- The right to non-discrimination, including intersectional discrimination

- The right to non-discrimination and the right to equal treatment. This right must be ensured in relation to the entire lifecycle of an AI system (design, development, implementation, and use), as well as to the human choices concerning AI design, adoption, and use, whether used in the public or private sector.

Universal Declaration of Human Rights:

- Article 7, Universal Declaration of Human Rights – Equality before the law

African Commission on Human and Peoples' Rights

473 Resolution on the need to undertake a Study on human and peoples' rights and artificial intelligence (AI), robotics and other new and emerging technologies in Africa – ACHPR/Res. 473

International Covenant on Civil and Political Rights:

- Article 6, International Covenant on Civil and Political Rights – Right to life

- Article 26, International Covenant on Civil and Political Rights – Non-discrimination

European Convention on Human Rights (ECHR):

- Protocol No. 12, European Convention on Human Rights

- Article 14, European Convention on Human Rights – Prohibition of discrimination

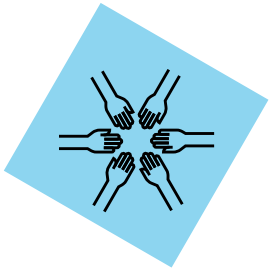
- Article 14 and Article 12 of Protocol No. 12, 'Guide on Article 14 of the European Convention on Human Right and on Article 1 of Protocol No. 12 to the Convention', Council of Europe – Prohibition of discrimination

Office of the United Nations High Commissioner for Human Rights:

- OHCHR, International Convention on the Elimination of All Forms of Racial Discrimination

- OHCHR, Convention on the Elimination of All Forms of Discrimination against Women

Rights of Indigenous Peoples and Indigenous Data Sovereignty



Indigenous peoples have a right to self-determination, to recognition of equal standing, and to remedy and reparation for the historical and systemic denial of their rights. These rights should be contextualised in accordance with the unique sociocultural histories and lived experience of the Indigenous people to whom such rights apply. Indigenous peoples also have a right to control data from and about their communities, activities, and lands and to shape the way these are collected and used. This encompasses both collective rights of benefit, access, ownership, and control and individual data-related rights and freedoms like rights to privacy and dignity.

- The rights to the restoration of equality, reparation, and self-determination

- Rangatiratanga (Maori): The empowering unity of a self-determining and sovereign community that is bound together by the reciprocal involvement of leadership and community members in collective governance, problem solving, and the articulation of shared goals and visions

- Makarrata (Aboriginal and Torres Strait Islander): The coming together after a struggle, confronting harms done, truth telling, righting the wrongs of the past, and restoring peace, solidarity, and community

The United Nations

- United Nations Declaration on the Rights of Indigenous Peoples

The Maori Report, Independent Maori Statutory Body 2016

Treaty of Waitangi/Te Tiriti and Māori Ethics Guidelines for: AI, Algorithms, Data and IOT, 2020

Compendium of Māori Data Sovereignty, 2022

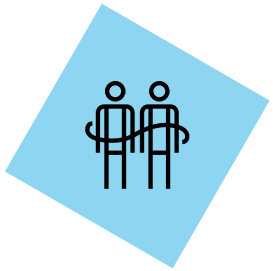
Barunga Statement, Aboriginal and Torres Strait Islander Peoples 1988

Uluru Statement from the Heart, Aboriginal and Torres Strait Islander Peoples, National Constitutional Convention 2017

Idle No More Movement, First Nations of Canada 2012

The CARE Principles for Indigenous Data Governance, 2020

Data protection and the right to respect of private and family life 	The design and use of AI/ML and data-intensive systems that rely on the processing of personal data must secure a person's right to respect for private and family life, including the individual's right to control their own data. Informed, freely given, and unambiguous consent must play a role in this. - The right to respect for private and family life and the protection of personal data - The right to physical, psychological, and moral integrity in light of AI-based profiling and emotion/personality recognition - All the rights enshrined in Convention 108+ of the Council of Europe and in its modernised version, and in particular with regard to AI-based profiling and location tracking	**Universal Declaration of Human Rights:** - Article 12, Universal Declaration of Human Rights – Right to respect for privacy, family, home, or correspondence **European Convention on Human Rights (ECHR):** - Article 8, European Convention on Human Rights – Right to respect for private and family life **African Commission on Human and Peoples' Rights** 473 Resolution on the need to undertake a Study on human and peoples' rights and artificial intelligence (AI), robotics and other new and emerging technologies in Africa - ACHPR/Res. 473 **African Union** - African Union Convention on Cyber Security and Personal Data Protection, 2014 - Article 8, 'Guide on Article 8 of the European Convention on Human Rights. Right to respect for private and family life, home and correspondence', Council of Europe – Right to respect for private and family life
Economic and social rights 	Individuals must have access to the material means needed to participate fully in work life, social life, and creative life, and in the conduct of public affairs, through the provision of proper education, adequate living and working standards, health, safety, and social security. This means that AI/ML and data-intensive systems should not infringe upon individuals' rights to work, to just, safe, and healthy working conditions, to social security, to the protection of health, and to social and medical assistance.	**African Union** Digital Transformation Strategy for Africa (2020-2030) **Universal Declaration of Human Rights:** - Article 3, Universal Declaration of Human Rights – Right to life, liberty, and the security of person - Article 12, Universal Declaration of Human Rights – Right to private home life

	-The right to just working conditions, the right to safe and healthy working conditions, the right to organise, the right to social security, and the rights to the protection of health and to social and medical assistance	- Article 22, Universal Declaration of Human Rights – Right to social security - Article 22, Universal Declaration of Human Rights – Workers' rights **International Covenant on Economic, Social and Cultural Rights:** - Article 6, International Covenant on Economic, Social, and Cultural Rights – The right to work - Article 7, International Covenant on Economic, Social, and Cultural Rights – Right to just and favourable conditions of work - Article 8, International Covenant on Economic, Social, and Cultural Rights – Right to organise - Article 9, International Covenant on Economic, Social, and Cultural Rights – Right to social security
Accountability and effective remedy 	Accountability demands that the onus of justifying outcomes that have been influenced by data-driven and AI/ML systems be placed on the shoulders of the human creators and users of those systems. This means that it is essential to establish a continuous chain of human responsibility across the whole data innovation lifecycle. Making sure that accountability is effective from end to end necessitates that no gaps be permitted in the answerability of responsible human authorities from first steps of the design of a system to its deprovisioning. Accountability also entails that every step of the process of designing and implementing the system is accessible for audit, oversight, and review. Where a system harms people, they have a right to actionable recourse and effective remedy, so that responsible parties can be held accountable.	**Universal Declaration of Human Rights:** - Article 8, Universal Declaration of Human Rights – Right to an effective remedy **International Covenant on Civil and Political Rights:** - Article 2, International Covenant on Civil and Political Rights – Right to effective remedy **European Convention on Human Rights (ECHR):** - Article 13, European Convention on Human Rights – Right to an effective remedy - Article 13, 'Guide on Article 13 of the European Convention on Human Rights.', Council of Europe – Right to an effective remedy

	- The right to an effective remedy for violation of rights and freedoms. This should also include the right to effective and accessible remedies whenever the development or use of AI/ML and data-intensive systems by private or public entities causes unjust harm or breaches an individual's legally protected rights.	
Democracy 	Individuals should enjoy the ability to freely form bonds of social cohesion, human connection, and solidarity through inclusive and regular democratic participation, whether in political life, work life, or social life. This requires informational plurality, the free and equitable flow of the legitimate and valid forms of information, and the protection of freedoms of expression, assembly, and association. - The right to freedoms of expression, assembly, and association - The right to vote and to be elected, the right to free and fair elections, and in particular universal, equal and free suffrage, including equality of opportunities and the freedom of voters to form an opinion. In this regard, individuals should not be subjected to any deception or manipulation. - The right to (diverse) information, free discourse, and access to plurality of ideas and perspectives - The right to good governance	**Universal Declaration of Human Rights:** - Article 19, Universal Declaration of Human Rights – Right to freedom of opinion and expression - Article 20, Universal Declaration of Human Rights – Right to freedom of peaceful assembly and association **International Covenant on Civil and Political Rights:** - Article 19, International Covenant on Civil and Political Rights – Freedom of expression - Article 21, International Covenant on Civil and Political Rights – Freedom of assembly - Article 22, International Covenant on Civil and Political Rights – Freedom of association - Article 25, International Covenant on Civil and Political Rights – Right to participate in public affairs, good governance, and elections

		European Convention on Human Rights (ECHR): - Article 3 of Protocol No.1, European Convention on Human Rights – Right to free elections - Article 3 of Protocol No. 1, Guide on Article 3 of Protocol No. 1 to the European Convention of Human Rights – Right to free elections - Article 10, European Convention on Human Rights – Freedom of expression - Article 10, 'Guide on Article 10 of the European Convention on Human Rights', Council of Europe – Freedom of expression - Article 11, European Convention on Human Rights – Freedom of assembly and association - Article 11, 'Guide on Article 11 of the European Convention on Human Rights', Council of Europe – Freedom of assembly and association

Rule of law

AI/ML and data-intensive systems must not undermine judicial independence, effective remedy, the right to a fair trial, due process, or impartiality. To ensure this, the transparency, integrity, and fairness of the data and data processing methods must be secured.

- The right to a fair trial and due process. This should also include the possibility of receiving insight into and challenging AI/ML-informed decisions in the context of law enforcement or justice, including the right to review of such decisions by a human. The essential requirements that secure impacted individuals' access to the right of a fair trial must also be met– equality of arms, right to a natural judge established by law, the right to an independent and impartial tribunal, and respect for the adversarial process.

- The right to judicial independence and impartiality, and the right to legal assistance

- The right to an effective remedy, also in cases of unlawful harm or breach an individual's human rights in the context of AI/ML and data-intensive systems

Universal Declaration of Human Rights:

- Article 8, Universal Declaration of Human Rights – Right to an effective remedy

- Article 10, Universal Declaration of Human Rights – Right to a fair trial

International Covenant on Civil and Political Rights:

- Article 2, International Covenant on Civil and Political Rights – Right to effective remedy

- Article 14, International Covenant on Civil and Political Rights – Right to fair trial

European Convention on Human Rights (ECHR):

- Article 6, European Convention on Human Rights – Right to a fair trial

- Article 6, 'Guide on Article 6 of the European Convention on Human Rights.', Council of Europe – Right to a fair trial

- Article 13, European Convention on Human Rights – Right to an effective remedy

- Article 13, 'Guide on Article 13 of the European Convention on Human Rights.', Council of Europe – Right to an effective remedy

Annex 2: Sustainable Development Goals

Image is from the United Nations Sustainable Development Goals blog post[23]

[24] United Nations, 2015

Annex 3: Insights from the Policy Pilot Partner Reports

A central aspect of the Advancing Data Justice Research and Practice project (ADJRP) is the project's collaboration with 12 partners organisations from across Africa, the Americas, Asia, and Oceania to enhance our understanding of data justice with a broad spectrum of regional, national, and local perspectives. We asked the partner organisations to engage with their communities on the meaningfulness of the data justice pillars and other components of this guide while it was in draft form. This annex summarises the feedback from these partner organisations derived from surveys, interviews, and workshops with policymakers, developers, and impacted community members in more than a dozen countries.

The partners whose insights inform this annex are:

- AfroLeadership (Cameroon)
- CIPESA - Collaboration on International ICT Policy for East and Southern Africa (Uganda)
- CIPIT - Centre for Intellectual Property and Information Technology Law (Kenya)
- Digital Empowerment Foundation (India)
- Digital Natives Academy (Aotearoa/New Zealand)
- Digital Rights Foundation (Pakistan)
- Engage Media (Indonesia/Philippines)
- Gob_Lab - Universidad Adolfo Ibáñez (Chile)
- Internet Bolivia (Bolivia)
- ITS Rio - Institute of Technology and Society (Brazil)
- Open Data China (PRC)
- WOUGNET - Women of Uganda Network (Uganda)

Prominent feedback and recommendations

Data Justice: The concept of data justice was novel for many audiences, and our partner organisations found that it was an unfamiliar term to many —though not all—of the respondents. In addition to conceptual unfamiliarity, in some cases, the term data justice did not easily translate into local languages. For example, there is no word for "data" in Urdu, which complicates linking the concept to narratives about justice (Digital Rights Foundation).[25]

While in many cases, respondents identified data justice with related concepts, such as fairness and dignity, in at least a few other cases, data justice was equated with legal justice (i.e., the work of courts and law enforcement). As a result, in some contexts "justice" did not conjure a positive valence because of local histories of state violence and oppression employed by officials claiming to be on the side of justice (Digital Natives Academy). Such concerns are exacerbated by the potential for AI/ML to be employed oppressively using the legitimising claims of public safety and national security to carry out inequitable or authoritarian agendas. This insight motivates us to employ particular nuance and care in our work to define data justice to ensure that its meaning is equated with the broader goals of fairness and emancipation rather than within the constraints of any particular legal structure or oppressive programmes of social control.

[25] Where appropriate, a Policy Pilot Partner organisation from which a particular insight was gleaned is cited throughout this annex.

Even where data justice is not conceived of purely in legalistic terms, we cannot assume that it will be universally understood as emancipatory or located in a human rights framework. How data justice is conceptualised and operationalised is likely to reflect variances in the needs, values, and cultural and political climate of a given society. In contexts with a tradition of resistance to hegemonic authority (governmental, corporate, or both), data justice is understood as a move towards resisting or reforming systems of social control and violence (Digital Natives Academy, WOUGNET). Where the authority and control of governments and/or business are accepted by a large share of the population, data justice may be viewed more narrowly in economic terms, as affecting consumer rights, labour relations, and access to innovation (Open Data China). It may be incumbent upon the ADJRP project to reflect on strategies to either "meet audiences where they are" or to do additional work to develop shared understandings of data justice that promotes an emancipatory and respectful vision that functions across societal differences. Beyond this, the results of the Policy Pilot Partner collaborations and our desk-based research recommend the view that the concept of data justice is contextually bound and plural. We have tried to integrate this understanding that data justice is both pluralistic and situated into the guides.

Another challenge for conceptualising and operationalising data justice are the social and economic conditions in which a significant portion of marginalised persons currently live. Partner organisations frequently mention "digital divide" issues such as digital literacy and lack of access to infrastructure, but they also point out that other factors interfere with attempts to develop an inclusive account of data justice which could combat such digital inequalities. In many locales of interest to data justice discourse, large population segments struggle even to meet their basic needs and face obstacles including poor sanitation, low reading literacy, military conflict, poor health, and hunger. For these populations, awareness of data justice issues may be very low even while data extraction and intervention by data-intensive technologies (for instance, in the provision of social services and international aid) may impact their lives. Data justice related issues are, in any case, challenging to prioritise over basic needs to a degree that enables the involvement of a full complement of voices (Digital Empowerment Foundation, ITS Rio). Furthermore, where digital technologies have improved otherwise desperate conditions, some are hesitant to adopt a critical stance towards technology, a stance that appears to be implied by the data justice discourse (Engage Media).

- Work to develop shared understandings of data justice that overcomes language barriers and supports the emancipatory aspirations of those facing injustice in both material and societal forms. Encourage reflective engagement of the contextually situated and pluralistic character of data justice.

Positionality: Partner organisations drew attention to the perspective from which this project emerges. Questions were raised about the data justice implications of the project itself; respondents expressed scepticism about the potentially extractive desire of a UK institution to acquire knowledge from an historically colonised people (Digital Natives Academy). Further evidence of this appears in, among other places, the project's move to shift attention away from data protection as a prominent data justice aim. In countries where state violence and repression is enabled by the collection of and access to data about populations, data protection remains a centrally important element in struggles for justice (Digital Natives Academy). Similarly, we are cautioned against broad characterisations and assumptions of disadvantage; cultures outside of the Global North are multi-faceted. We are cautioned, for example, from implying that all people living in a particular region are poor. Such a presumption is common amongst Global North perspectives and is potentially exacerbated by data collection practices by Western NGOs that focus on poor populations (WOUGNET). These insights elide with other concerns raised about the positionality of this work being Eurocentric (despite our claims and efforts to the contrary) and at risk of being out of touch with non-Western experiences of coloniality and modernity.

We welcome and accept this critique. We are reminded that the ADJRP project is an opportunity for the project team to learn from others as we simultaneously provide resources for learning.

- The project team should commit to the additional, necessary work of consultation, inclusion, and reflective self-development to produce work that is viewed as relevant, legitimate, and offered in service of meaningful and holistic intercultural justice.

Accessibility of the material: Some partner organisations offered criticisms of choices of language in the materials. Some respondents suggested that the pillars overgeneralise populations rather than accounting for cultural uniqueness. These respondents also questioned the term "pillars" as reflecting a Western perspective (Digital Natives Academy). Others observed accessibility challenges along two dimensions. First, it was felt that some of the descriptive material supporting the pillars was framed in academic and technical language that some audiences (e.g., policymakers) may find dense and alienating (CIPESA, Engage Media, Gob_Lab). Second, aspects of the project appear to assume a readership that accepts that data processing can be a source of material inequity, and the associated analysis of power relations in technology production and regulation frames some parties as oppressors, implicating some readers who are unlikely to identify as such (Gob_Lab). While the project team has worked to make the language of its materials more accessible in subsequent drafts, there is always more work to be done, including in following recommendations to include more concrete examples to illustrate abstractions. In anticipation of this need for examples, a track of work was initiated early in the ADJRP project to build a repository of use cases from around the world that tell stories both of challenges to data justice and of transformative data justice practices that illustrate the pillars. This piece, Data Justice Stories: A Repository of Case Studies, will be published alongside this guide. As far as displeasing some readers who may feel implicated as creating data inequities, it is likely to be more challenging to reframe data justice in terms that do not cause discomfort for some readers.

- Ensure that the material is based on a foundation of sound, well-reasoned arguments and inclusive language to ensure that intended audiences see themselves as partners in data justice.

Other insights and recommendations (in no particular order)

Accountability and Recourse: A holistic conception of data justice should include means to hold those responsible for data injustice accountable. Overlapping this concern, people who experience harm from data collection and use should have avenues of recourse available to them to seek remedies and hold those responsible accountable (Engage Media).

- Our work could do more to address accountability and recourse as a feature of data justice.

Business transparency: in addition to making data-driven systems more explainable and transparent to those who use or are otherwise affected by them, the details of data and technology procurement by governments and business-to-business data sharing should also be considered as targets for data justice transparency efforts (WOUGNET).

- Broaden the scope of transparency to include business practices and agreements

Domestic violence: Data-driven technologies can play a role in the enablement of domestic abuse. This is a specific and impactful data injustice case to consider (WOUGNET).

- Be attentive to identity-related harms from 'unintended' uses of data

Disability justice: The identity and access pillars are likely to be strengthened by making explicit reference to abledness and disability as data justice issues (WOUGNET).

- Account for disability rights

Audience diversity: It was suggested there may be value in differentiating between 'impacted' stakeholders (i.e., potentially harmed or disadvantaged) and general consumers (i.e., potentially affected but do not express concerns about direct harm) to make the work more relatable to more recipients (Open Data China). It was also suggested that our audience distinctions overgeneralise and fail to account for the diversity of experiences. E.g., indigenous developers are likely to have unique perspectives and needs (Digital Natives Academy).

- Be mindful of audience, including those who do not fit easily into the three categories of 'developer', 'policymaker', and 'impacted communities'.

Rule of law: In many countries, existing laws governing data justice issues (e.g., data protection and privacy) are routinely unenforced or circumvented by both state and non-state actors. (WOUGNET).

- Data protection should be considered a component of data justice.

Regulatory power and abuse: In some national contexts, the strengthening of regulatory agencies and associated laws can aid the cause of data justice, while in others it provides oppressive power to authoritarians and crony governments.

- Be attentive to how data justice might be enacted in particular contexts—and the roles and responsibilities of those who are entrusted to be promote data justice.

Feedback specifically related to the pillars

Power: Some respondents were concerned that the power pillar may not account for the full nuance of power and the difficulty to recognise data and technological power everywhere it resides. Where most people may see such power residing in governments and large companies, it may be harder to see when it is a feature of local and small business interests. Other respondents were concerned that the project's portrayal of power is binary, where there are oppressors and oppressed, when the actual landscape of power cuts across obvious categories. For example, we should consider the nuanced power relations of Global South governments in which they hold power over their constituents but are themselves frequently made subservient to Global North governments and companies (Gob_Lab). Furthermore, the interplay of power and influence should be recognised to account for cases in which they do not manifest together (CIPESA).

- Attend to the nuance of power —degrees of power held by different stakeholders and spectrums of power.

Equity: This was a challenging concept for some partner organisations and their local communities because of the term's inexact translation into local languages (Digital Rights Foundation, ITS Rio). In other contexts, the concept was more readily understood as a feature of social and economic hierarchies. For these groups,

the meaning of technological progress varies significantly based on one's geography (e.g., urban vs. rural) and social position (e.g., young tech enthusiast vs. precarious already vulnerable) (Engage Media).

- Work on developing a shared understanding of equity that functions in multiple cultural and social contexts.

Access: There was some variance in how this pillar was understood. For some respondents, access was portrayed as an issue of access to data and barriers to that access. However, for others, access was primarily framed in terms of a digital divide, with a particular focus on infrastructure and connectivity being salient. There were multiple accounts of large population segments without assured connectivity. Digital literacy was also mentioned as essential to consider. At least one respondent group emphasised the importance of these notions of access as fundamental to human rights given their role in participation in contemporary civic and commercial life.

- Work on developing a shared understanding of this pillar. Be attentive to questions of infrastructure as a feature of this pillar.

Participation: For some respondents, the element of participation was portrayed as a tension. They argued that, on the one hand, there is a need for technology providers and regulators to do more to make their work inclusive, aware, and potentially simplified in order to meet affected persons and communities where they are. On the other hand, there is a need for investing in the work of developing more expertise in society so as not to impede technological progress with process but rather to enable more forward movement in technological development and uptake (Gob_Lab). This tension points to an underlying strain in approaches to data innovation between more horizontal and participatory technology practices and more vertical strategies of technological governance. Mediating between these should be approached cautiously so as not to contribute to further epistemic injustice and the denigration of local knowledge.

Where participation was described as engagement between decision makers and affected persons, some respondents argued that increasing the diversity of those involved in data and technological practices was important, while others were distrustful of public institutions and cynical about participatory work being easily co-opted and corrupted by political operators and other powerful interests (Gob_Lab). Furthermore, there were concerns that some members of society would unlikely be invited as participants in any collaborative processes owing to power relations and status assignments that treat some as 'unworthy'. Participation was also understood by some as the difference between opting in and opting out of technology use. Arguments were offered, on the one hand, that opting out can be a form of resistance, while others argued that allowing some to opt out creates a drag on the society as a whole.

- Be attentive to barriers to meaningful participation as well the potential burden on relevant stakeholders as a form of injustice.

Knowledge: Concerns were raised about how public officials, civic entrepreneurs, and technology companies discount existing bodies of knowledge and seem to actively unlearn or leave behind what is known about societal issues as they charge forward towards the goal of digital transformation. An additional point for the project team to consider is the framing of this pillar for societies with a rich oral tradition and limited written one. Oral knowledge is less easily datafied and risks erasure by digital systems. Furthermore, there are concerns about the risks of acquiring knowledge from indigenous communities in ways that threaten data sovereignty.

Well-meaning inclusion efforts may be seen as colonial and extractive (Digital Natives Academy).

- Recognise the "unlearning" of knowledge as a challenge for this pillar.
- Broaden the understanding of knowledge to account for oral traditions.
- Recognise the issue of data sovereignty in relation to the goals of the knowledge pillar.

Identity: In relatively homogenous societies and societies where individualism is deemphasised, the identity pillar may not be immediately salient without being linked directly with the power pillar. Identitarian concerns may become more legible and relatable when examined as an aspect of power and hierarchy (Open Data China).

- Consider the identity pillar from the perspective of cultures that are non-individualistic.

Other issues of note

Power and agency: There were concerns as well about the feasibility of putting the pillars and reflections into practice when the majority of technological power resides outside of the national context where they operate. This was expressed across all target audiences: marginalised people lack the resources to mobilise on issues of data justice; developers may be forced to compromise when faced with market conditions; policy experts are constrained by lack of jurisdiction over the actions of major companies sited outside their national boundaries.

Representation: In addition to concerns about the representation of non-Western people and concepts in data, there were also concerns raised about the fit of technologies to local contexts. Too often "adaptation" stands in for context-aware development, resulting in a sense of exclusion. For indigenous populations whose very existence is threatened and whose visibility is muted in many societies, there is a tension between the benefits of being made visible by representation in data and concerns about data sovereignty, cultural exploitation, and digital abuse (Digital Natives Academy).

Conceptual novelty and awareness: Concerns were raised about the lack of a conceptual basis among many affected individuals and communities creating barriers to even starting a conversation about data justice. Literature on social justice issues may not be available in many languages (e.g., indigenous, regional languages) making it difficult for advocates to join data justice to similar narratives. This was reflected by respondents who struggled to articulate a meaning of data justice that corresponds with what is used in the materials provided.

Techno-optimism and inevitability: A key challenge noted by one partner organisation is the prevailing attitude that technology should play a steering role in progressing their society towards economic and other improvements. There are some lessons in this perspective, particularly in national contexts in which non-technical support infrastructures are weak and digital technologies, however flawed, offer improved conditions that might otherwise remain elusive (Digital Empowerment Foundation). Consequently, some respondents resisted emphasising the risks and social issues raised by data and technologies, favouring perspectives that emphasise potential benefits (ITS Bolivia). Others were more critical. They emphasised that, where digital technologies were elevated as means to improvement (i.e., as a saving force), they could be uncritically taken to embody progress in and of themselves. Such an idealisation could lead to downsides being largely ignored and other efforts to achieve social equity being set aside (Digital Empowerment Foundation, Engage Media).

Stakeholder engagement: At least one partner organisation noted challenges working with policymakers, who they found resistant to engaging on the topic and/or requiring significant advance work to engage (Digital Empowerment Foundation). In some cases, people involved in policy chose to participate in providing feedback as individuals rather than from their professional perspectives. It was not made clear the source of this resistance, but it is something the project team should consider. Perhaps this signals that the concept of 'data justice' is seen as threatening to those in political positions and therefore must be approached with particular care for some audiences.

Annex 4: ADJRP Positionality Statement

As researchers and individuals, we are committed to social justice and to revealing the systemic bases of intersectional discrimination in our research practices and life choices. We represent various communities including LGBTQ+ identities, ethnicities, women in STEM, migrants, and citizens of LMICs. For this reason, some members of our team relate to marginalised stakeholders from both a position of kinship and one of solidarity, while others confront their privilege with reflexivity and critical self-awareness. Our team participates in research activities that promote justice in pursuit of a pluralistic, anti-racist, gender-equitable, and accessible society. A key argument that motivates our research is that artificial intelligence and associated technologies are potential sites of production and reproduction of systemic advantages for people in positions historically associated with social power. This valence for AI/ML is not inevitable and we seek to combat it through the work of explication, illumination, and alternative framings. We recognise and interrogate our own positionalities of power and privilege and see opportunities to use these advantages to lift up others, and to promote justice, equity, and liberation.

We also direct our expertise and labour to social justice causes in our communities. Members of our team support prison education programs, have advised government institutions in efforts to lower barriers to legal justice for marginalised communities, develop modes of participatory community engagement to bolster the voices of marginalised voices in decision-making processes and research governance, lobby local governments in technology civil rights matters, develop digital security capacity-building and tools for harassed social and political leaders and activists, develop AI/ML tools that are inclusive in design and practice, and use human-in-the-loop data science methodologies to combat issues like food insecurity, amongst others. In short, we are collectively committed to the work of justice and to revealing the systemic basis of intersectional discrimination in our research and our lives.

In collaboratively formulating this team positionality statement, each of us contributed an individual positionality statement, which was aggregated in our team positionality statement shared here. Members of our team have roots in or come from regions and countries across the world, from South Asia and Australia to Argentina, Venezuela, Great Britain, and the United States. Some of us identify as cisgender, others as trans persons, and others as neither of these. While some of us identify as socially privileged and relatively affluent, others have faced poverty and gained a formal education despite financial and familial barriers.

By engaging in practices of critical self- awareness, we endeavour to draw on each of these unique social and cultural positions to bring about progressive social change and to gain insights and analytical leverage about data justice. As one of us puts it, ‘I am committed to promoting a pluralistic, anti-racist, gender equitable, and accessible society through my research, activism, and other life activities. I seek to reveal and combat the sources of systemic and intersectional oppression and hierarchical domination in my own society and within the multi-stakeholder communities in which I participate’.

Another of us emphasises how they draw directly on their identity in framing their research: ‘I have developed a programme of research activities that places the law, human rights, diversity, and inclusion at the core of responsible data, data flows, and AI research, innovation, and governance. In my projects, I draw on my own diversity to inform on equality and inclusion issues, playing particular focus on (a) improving and informing on data capture, representativeness, language and identity labels of hidden and marginalised populations, and (b) fostering multi-disciplinary, multi-sector, stakeholder and community engagement in the design of data capture, flows and interventions to address societal challenges (e.g. slavery and migration, use of biometrics

and digital traces), working with international colleagues and organisations that can best inform and engage the population who would be impacted'.

Some of us navigate lived experience, confronting intersectional discrimination, and managing the adversities of code-switching, while others reflexively acknowledge their inheritance of legacies of unquestioned privilege along with the limited mindsets that derive therefrom. Some of us experience both of these, coping with harms that are rooted in deep-seated discrimination while simultaneously inhabiting other socially privileged strata. All of our team members who identify as socially privileged have pursued a career defining 'commitment to facilitating and amplifying the voices of people and communities in less privileged positions'. However, we also consider the potential for illocutionary disablement from securitising or speaking on behalf of others and from speaking from a space where we may not have the authority. Nevertheless, from such a critical self-acknowledgement of privilege, comes a deep sense of responsibility namely, the responsibility to marshal the advantages of carrying out research in power centres of the Global North and at well-funded research institutions in order to serve the interests of those on our planet who are all too- often marginalised, de-prioritised, and exploited in the global data innovation ecosystem.

A Note on Sources

This guide is intended to be a companion to three other pieces of research that have been published contemporaneously: Advancing Data Justice Research and Practice: An Integrated Literature Review, Advancing Data Justice Research and Practice: Annotated Bibliography and Table of Organisations, and Data Justice Stories: A Repository of Case Studies. Expansions on the ideas presented here and references for source material can be found in the Integrated Literature Review. All these documents are located here.

For sections of this guide related to technical background, stakeholder engagement, and practical guidance, we have drawn on:

Esteves, A. M., Factor, G., Vanclay, F., Götzmann, N., & Moreira, S. (2017). Adapting social impact assessment to address a project's human rights impacts and risks. *Environmental Impact Assessment Review, 67*. https://doi.org/10.1016/j.eiar.2017.07.001

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Leslie, D. (2019). *Understanding artificial intelligence ethics and safety: A guide for the responsible design and implementation of AI systems in the public sector*. The Alan Turing Institute. https://doi.org/10.5281/ZENODO.3240529

Other excellent resources on community and stakeholder engagement which we have drawn on here include:

https://www.thersa.org/globalassets/reports/2020/IIDP-citizens-assembly.pdf

https://www.local.gov.uk/sites/default/files/documents/New%20Conversations%20Guide%2012.pdf

https://datajusticelab.org/wp-content/uploads/2021/06/PublicSectorToolkit_english.pdf

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