Introduction

Used unwisely, Artificial Intelligence (AI) has the potential to reinforce existing harmful gender stereotypes and prejudices due to bias in its algorithms. In an attempt to overcome this, the African Population and Health Research Center (APHRC) developed what is called "Gender and Intersectionality in AI Checklist". While the Checklist is an attempt to overcome the gender data gap in AI, the monitoring tool is to understand how the incorporation of gender and intersectionality can contribute towards better gendered health outcomes. The monitoring tool is meant to avoid oversight by individuals, funders, governments, research institutions, universities, and the like with regards to incorporating GI issues in AI algorithms by ensuring compliance to the checklist.

The Monitoring tool is designed to help (a) systematically follow up and collect information on the application of the checklist in the design, data collection, analysis and dissemination of data, and (b) to collect information on how the application of gender and Intersectionality issues in AI algorithms influence the outcome of the research work.

Specifically, the objectives of this Monitoring Tool are to:
- Track the progress and performance in the incorporation of gender and intersectionality in AI research.
- Analyze and identify lessons (or the lack thereof) through the incorporation of Gender and intersectionality issues in AI algorithms.
- Understand how actionable the data is and to identify lessons learned.

Approach

The Monitoring Tool is a crucial part of the Checklist. It describes what is to be assessed and lists the required indicators which will collect information to understand how the checklist is assisting to eliminate the challenges of gender and intersectionality data gap in AI Algorithms. Indicators are levers to strengthen the incorporation of gender and intersectionality issues in the research and its outcomes. The following points are recommended when using this Tool at the different stages of the research process:
- During the design phase, make sure that the questions raised on the checklist are adequately addressed before the finalization and implementation of the data collection tool. At this stage, the effort should be to ensure that the design considers and helps generate as much qualitative and quantitative data on gender and intersectionality.

See Gender and Intersectionality in AI Checklist

- During the data collection phase, look at samples of data collected so far and identify the nature of the data that is generated. Evaluate whether adequate gender and intersectionality-related information is being generated. If not identify the challenges and make the necessary adjustments based on the lesson identified so far.
- At the analysis stage, ensure that gender and intersectionality-related issues, especially of under-represented groups of people, are highlighted and analyzed leading to clear conclusions and recommendations that are actionable.
- It is advised that concrete evidence is collected under each indicator and compile as many examples as possible to help understand the changes/results that was achieved (or failed to be achieved) including unintended results stated below.
- Reporting on unintended results, (both positive and negative results), and acknowledging no change are very important as they will provide the opportunity to learn lessons from existing practices.
- At the initial stages of the monitoring process when collecting data on indicators, refrain from making conclusions and recommendations before compiling adequate examples that illustrate the conclusion/recommendations.
- Lastly, ensure conclusions and recommendations include the extent to which data addresses Gender and Intersectionality issues.

Who will be responsible for Monitoring and Learning?

- Those using AI for social change especially to inform policy directions such as governments, funding agencies, research organizations, ethics boards, and gender data networks.
- Stakeholders who must make sure gender and intersectionality are accounted for within their research and in their recommendations.

Factors to consider for Monitoring

1. Representativeness of the data

Key indicators to consider:
- The extent to which gender and intersectionality related issues are considered in the AI models and algorithms.
  - great extent
  - small extent
  - not at all

Please provide concrete example(s) that leads to make the choice.

- The extent to which potential limitations were identified and explored (for example, the extent to which the limitations of incomplete data were explored, recognizing that all datasets are inherently biased.)
  - great extent
  - small extent
  - not at all

Please provide concrete example(s) that leads to make the choice.

- The extent to which the data project reduces gender and intersectionality data gaps
  - great extent
  - small extent
  - not at all

Please provide concrete example(s) that leads to make the choice.

- The extent to which the data project explores diverse and complimentary (including qualitative and quantitative) data sources.
  - great extent
  - small extent
  - not at all

Please provide concrete example(s) that leads to make the choice.

2. Compliance

Key indicator to consider:
- The extent to which existing regulations, and policies on gender and data, privacy are taken into consideration (give examples).
  - great extent
  - small extent
  - not at all

- How safe is the AI system?

Berryhill, A. and Fuentes, L. Technical Brief 1: Designing gender-responsive data projects. Ladysmith2. Available at:
https://covidsouth.ai/research/download/English-Technical-Brief-1-Designing-gender-responsive-data-projects

3. Systems and procedures

Key indicators to consider:

The extent to which predictions reflect the differences and experiences with regards to gender and intersectionality. Provide examples
- great extent
- small extent
- not at all

 Please provide concrete example(s) that leads to make the choice.

AI models and data are checked for biases through appropriate procedures (provide examples)
- great extent
- small extent
- not at all

Please provide concrete example(s) that leads to make the choice.

Accountability procedures are in place to address ethical and fairness concerns.
- great extent
- small extent
- not at all

Please provide concrete example(s) that leads to make the choice.

4. Learning

Conclusion and recommendations

Now that examples are collected under each Indicator, it is time to analyze patterns and identify emerging questions, and potential next steps. Please refrain from reaching to conclusions and providing recommendations before addressing each question one by one.
- What patterns are emerging from the information at hand?
- What questions are emerging that need to be further explored?
- What lessons are we drawing from these patterns and questions?
- What conclusions can we draw from this information?
- What are potential next steps to respond to these conclusions?

It is also advised to look at the following four questions[1] to help minimize biases and avoid harmful outcomes on the overall research outcome and process before finalizing the conclusion and recommendations.
- How representative is the data set?
- Does the data model account for biases?
- How accurate are the predictions based on big data?
- Does reliance on big data raise ethical or fairness concerns?

ig Data: A Tool for Inclusion or Exclusion? Understanding the Issues (FTC Report). Available at: https://www.ftc.gov/reports/big-data-tool-inclusion-or-exclusion-understanding-issues-ftc-report