ARTIFICIAL INTELLIGENCE (AI) RISKS TO SURVEY DATA

Artificial Intelligence (AI) and risks to Survey data

There are growing concerns from researchers regarding the threat of Bot interference to data collected via online surveys. A Bot is broadly described as a program that has been programmed to autonomously undertake certain tasks, this includes but is not limited to interacting with systems and users in a ways similar to a person. A Bot can carry out tasks much quicker than a human can, potentially submitting thousands of responses over a very short period of time. Bot's can be created by people to target surveys and online data collection in bad faith for a number of reasons including:

- Taking advantage of reimbursement or payment for the completion of surveys
- Compromising the data by submitting a number fraudulent responses
- General mischief or interference for no direct gain

How can I strengthen my methods to protect the integrity of my survey Data?

The Australian Code of the Responsible conduct of Research (2018) states that it is the responsibility of researchers to ensure that they comply with the relevant laws, regulations, disciplinary standards, ethics guidelines and institutional policies related to responsible research conduct.

As with any research project it is important that you undertake due-diligence work when preparing to begin your data collection to ensure that any legal or ethical risks are understood and mitigated prior to commencing your project. In Australia, all research involving Human participants or their data is subject to ethical approval as detailed in the National Statement for Ethical Conduct of Human Research 2007 (updated 2018).

When addressing your application for Human Research Ethics Approval you will be asked to define any risks associated with the research and how you will mitigate these risks.When carrying out survey based research it is important to consider the realistic possibility of Bot interference and have a plan in place which allows you to identify fraudulent responses.

Researchers have shared the following techniques that they have used to identify bot interference. These techniques should not be considered as protections, rather as tools to indicate suspicious activity. It is also important to consider any ethical risks with using these tools, such as the potential to identify participants or the over-collection of participant data.

- Qualtrics fraud-detection
- ReCAPTCHA
- Open Ended Questions
- Honeypot Questions
- Client side and survey side time stamp
- IP address logging
- 2 stage design (including screener activities)
- Identity verification

Use cases of of AI include but are not limited to:

TEXT

◆ Tools such as ChatGPT and Bard use AI to generate human like text based on prompts, past conversation or google-app integration.

IMAGE

◆ Products such as DALL-E, MidJourney or DeepDream use text prompts or photographs to generate images such as photographs or artworks.

MUSIC AND AUDIO

◆ Magenta and Lyrebird are examples of AI platforms where users can use machine learning to generate music or imitate human voices.

VIDEO

◆ Video generators use a variety of media types to quickly create realistic video content.

DRUG DISCOVERY

◆ AI can be used to assist in drug discovery by analyzing trends, patterns and molecule structures to help identify and predicted the outcomes and effectiveness of existing and novel drugs.

Relevant Links:

◆ National Statement on Ethical Conduct in Human Research (2007) - Updated 2018

https://www.nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018

◆ Australian Code for the Responsible Conduct of Research, 2018

https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018#block-views-block-file-attachments-content-block-1

Useful Resources:

◆ Identifying and preventing fraudulent responses in online public health surveys: Lessons learned during the COVID-19 pandemic

https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0001452

◆ Specific challenges posed by artificial intelligence in research ethics

https://www.frontiersin.org/articles/10.3389/frai.2023.1149082/full

◆ TESQA Resources on Artifical Intelligence

https://www.teqsa.gov.au/guides-resources/higher-education-good-practice-hub/artificial-intelligence

◆ CSIRO Discussion paper: AI Ethics Framework

https://www.csiro.au/en/research/technology-space/ai/ai-ethics-framework

◆ UNESCO Recommendation on the Ethics of Artificial Intelligence

https://unesdoc.unesco.org/ark:/48223/pf0000380455