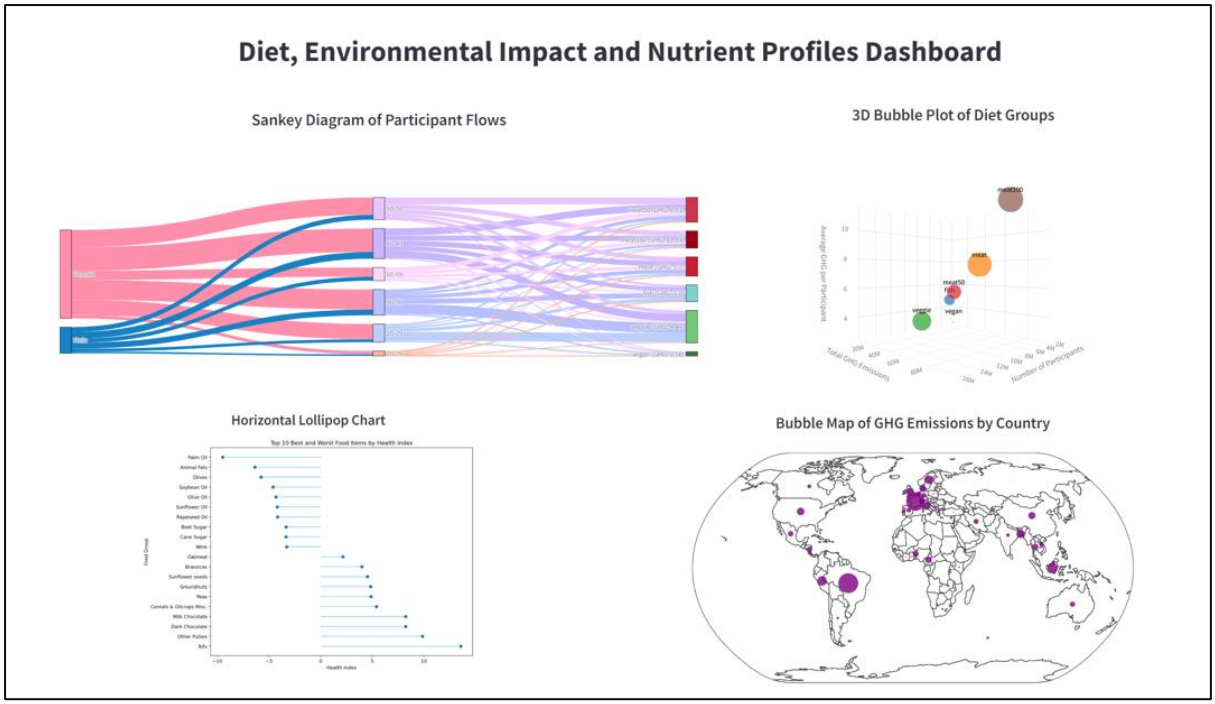
Research Methods Coursework 2

Uploaded by: Shruti Sundaram



Visual Design: Dashboard consisting of *Sankey Diagram*, *3D Bubble Plot*, *Bubble Map*, and *Lollipop Chart*

Name of Tool: Streamlit, python

Diet Groups: Vegan, Veggie, Meat, Meat50, Meat100

Variables: Sankey Diagram

- Environmental impact variable considered is GHG Emissions (*mean_ghgs*)
  GHG is chosen since it is one of the prominent factors understood by society at large when it comes to global warming and climate change.
- Sex (Male, Female)
- Age group (’20-29’, ’30-39’, ’40-49’, ’50-59’, ’60-69’, ’70-79’)

3D Bubble Plot

- Number of Participants (*n_participants*)
- Total GHG Emissions (*total_ghg*)
- Average GHG Emissions per Participant (*avg_ghg_per_participant*)
- Diet Group (*diet_group*)

Bubble Map

- Country
- GHG Emissions

Horizontal Lollipop Chart

- Food Group (*food_group*)
- Health Index (*['Protein', 'Dietary.Fiber', 'Vitamin.C', 'Vitamin.A', 'Folate', 'Iron', 'Calcium']- ['Saturated.FA', 'Sodium']*)

Visual Mappings: In Sankey diagram, visual mappings are used to illustrate the flow of participants by gender, age, and diet groups with associated greenhouse gas (GHG) emissions.

- **Colour:** Two primary colours are used to differentiate gender at the beginning of the flows—blue for male and pink for female. Each age group and diet group have a distinct colour to help identify its flow.
- **Width of Flows:** The width of each flow (the grey bands that connect the different categories) represents the number of participants or the magnitude of flow from one category to the next.
- **Hierarchy:** sex -> age group -> diet group.

3D bubble plot shows dietary impacts in terms of participant counts, total GHG emissions, and average GHG emissions per participant, provides a multifaceted view of the data.

- **Size:** Bubble size is proportional to the total GHG emissions of the diet group.
- **Colour:** Each diet group bubble is assigned a unique colour.

Bubble Map creates a map that visually represents the geographic distribution of greenhouse gas (GHG) emissions by country (represented by bubbles).

- **Colour:** Each diet group bubble is assigned a unique colour.
- **Country**
- **Size:** Bubble Size is proportional to the total GHG emissions of the country.

Horizontal lollipop chart presents the "Health Index" of different food groups, focusing on the top 10 best and worst according to their nutritional profiles.

- **Length:** Represents the magnitude of Health Index.

Unique Observation: Sankey Chart – Females part of the younger age group (20-29, 30-39) form the majority of meat-free diet followers.

Bubble Map – Brazil had the highest GHG emissions despite having the Amazon rainforest. It was surprising.

Lollipop Chart - Milk Chocolate and Dark Chocolate are both on the negative side, though dark chocolate is closer to neutral. In the fats category, Palm Oil is at the negative extreme, while Olive and Rapeseed Oil are viewed more positively, illustrating varied health impacts among fats and chocolates.

Data Preparation: Horizontal Lollipop Chart:

Health Index calculated from the nutritional data by subtracting the detrimental nutrients from the beneficial ones, and aggregated for each food group.

URL to screen-capture demo: https://youtu.be/C5O1Cub6enY

URL to dashboard: https://rmdashboard.streamlit.app/

URL to source code: https://github.com/shruti-sundaram/rm_dashboard/blob/main/new.py