

APPENDIX

A CORPUS

Fig. 1 gives examples of different map representations.

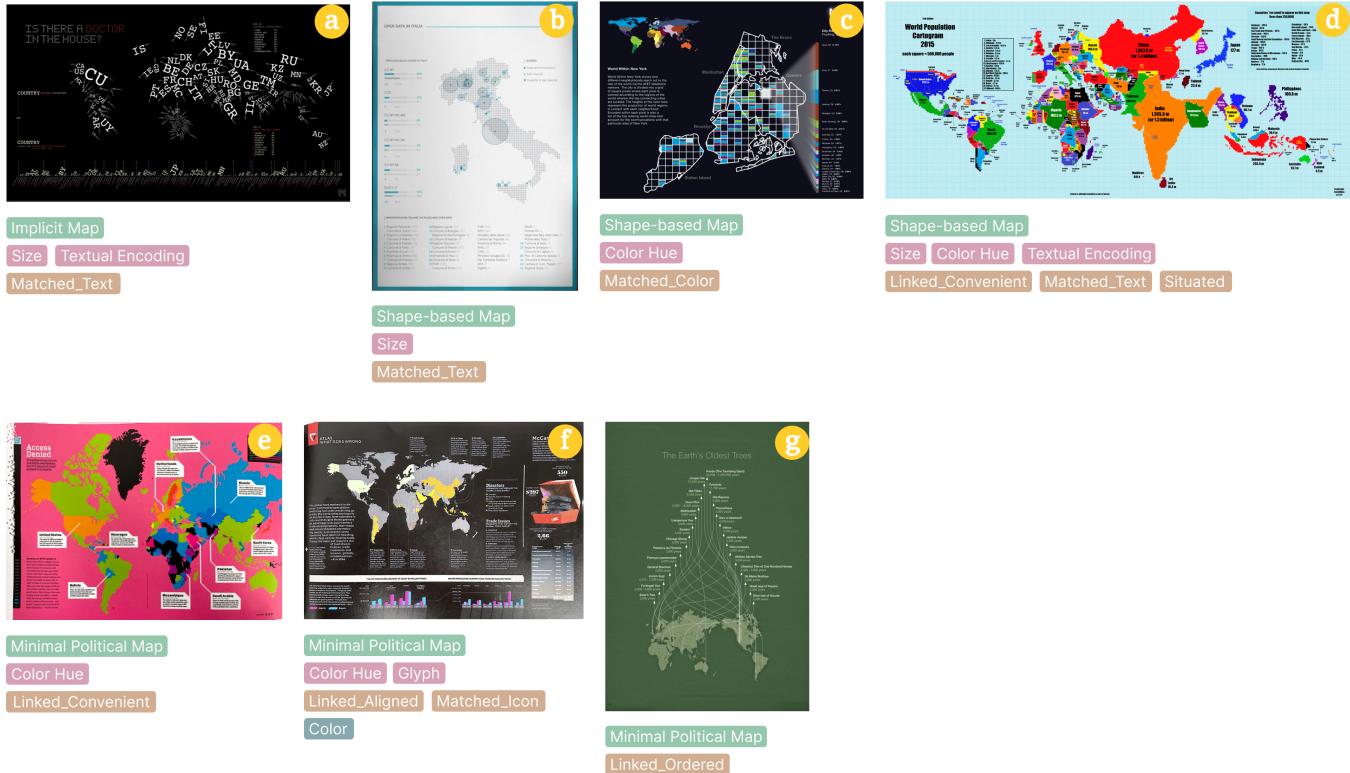


Figure 1: Example geo-infographics in Corpus

B COMPLEMENTARY USER INTERFACES

B.1 GALLERY Interface

Fig. 2 shows the interface of GALLERY.

B.2 ABOUT Interface

Fig. 3 shows the interface of ABOUT.

C COLLECTED GEO-INFOGRAPHICS CREATED BY USERS

Fig. 4 and Fig. 5 show the geo-infographics created by users.

D USER STUDY QUESTIONNAIRE

D.1 Demographic Background

Here are the contents of the demographic background questionnaire in the pre-questionnaire, consisting of six short answer questions and a multiple choice question.

- **Question 1:** Age.
- **Question 2:** Gender
- **Question 3:** Filed of Study or Profession.
- **Question 4:** Have you had any experience with data visualization?
- **Question 5 (multiple choice question):** Which of the following tools have you used for data visualization?
 - Microsoft Excel
 - Tableau
 - Google Charts
 - D3.js

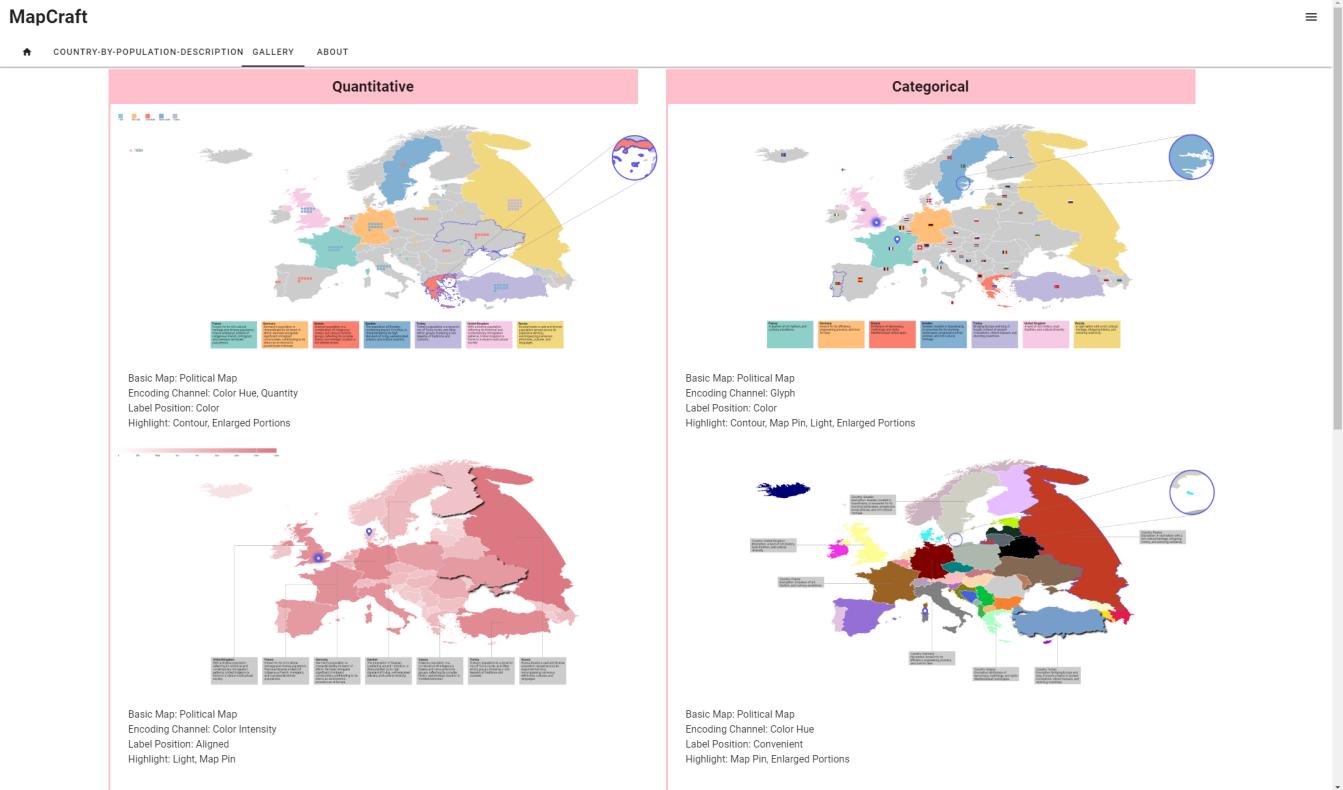


Figure 2: GALLERY Interface

- R (ggplot2, Plotly)
- Python (Matplotlib, Seaborn, Plotly)
- Figma
- Other
- **Question 6:** Have you had any experience with Geo-infographics or interactive maps websites?
- **Question 7:** Self-assessment of confidence level in design geo-infographic.

D.2 Geo-infographics Designing Knowledge

Here are the contents of the geo-infographics designing knowledge assessment in the pre- and post-questionnaire, consisting of eight short answer questions.

- **Question 1:** What encoding channels come to your mind for representing population data?
- **Question 2:** What encoding channels come to your mind for representing country information data?
- **Question 3:** Based on population data, which encoding channels do you think can be effectively combined for dual encoding?
- **Question 4:** Trying to add annotation in geo-infographic, what placement or match method can you think of?
- **Question 5:** What methods can you think of for highlighting within a geo-infographic?
- **Question 6:** Which encoding channels within the design space do you think are appropriate for population data?
- **Question 7:** Which encoding channels within the design space do you think are appropriate for country information data?
- **Question 8:** Which encoding channels within the design space do you think can be effectively combined for dual encoding based on population data?

D.3 Interview

Here are the questions in the interview.

- **Question 1:** What tool features are particularly useful for you to complete tasks? Please explain the reason.
- **Question 2:** What difficulties or challenges did you encounter while using *MapCraft*?
- **Question 3:** Do you think it is reasonable to categorize visual elements into basic map representations, encoding channels, label design and placement, and highlighting techniques? Is it easy to understand? Has it caused you any trouble?
- **Question 4:** Do you plan to continue using this tool in future projects? Why or why not? What factors will influence your decision?

MapCraft

The interface is thoughtfully divided into two principal components: the Components Panel and the Canvas Panel, facilitating an organized and intuitive approach to geo-infographic creation.

Inside the Components Panel, there is a curated selection of visual elements, categorized according to a design space framework that encompasses four pivotal dimensions of geo-infographic design.

Users may select the visual elements of choice from the Components Panel for each dimension. The data designated for encoding, signified by the second key-value pair within the JSON file, is integrated into the encoding channel. Country names listed in the JSON file serve to align the data with corresponding labels and their designated positions on the map. The optional labels included in the JSON file can be strategically positioned as per the user's selected design preferences.

It should be highlighted that the components within the dimensions of Basic Map Representations and Label Design and Placement are mutually exclusive, implying that only one type of component can be active within each dimension at any given time.

An advanced functionality of the interface is the 'dual encoding' button, which empowers users to implement dual encoding by selecting elements from two encoding channels concurrently. This feature allows for a more nuanced representation of data. Furthermore, all highlighting techniques within the Highlighting Techniques dimension are versatile and can be applied in multiples, with no restrictions on the number of uses.

The Canvas Panel acts as the central workspace where users can assemble their geo-infographics. Upon finalizing the composition, users can export the geo-infographic as an SVG file by utilizing the 'print' button, encapsulating their work on the Canvas Panel.

Figure 3: ABOUT Interface

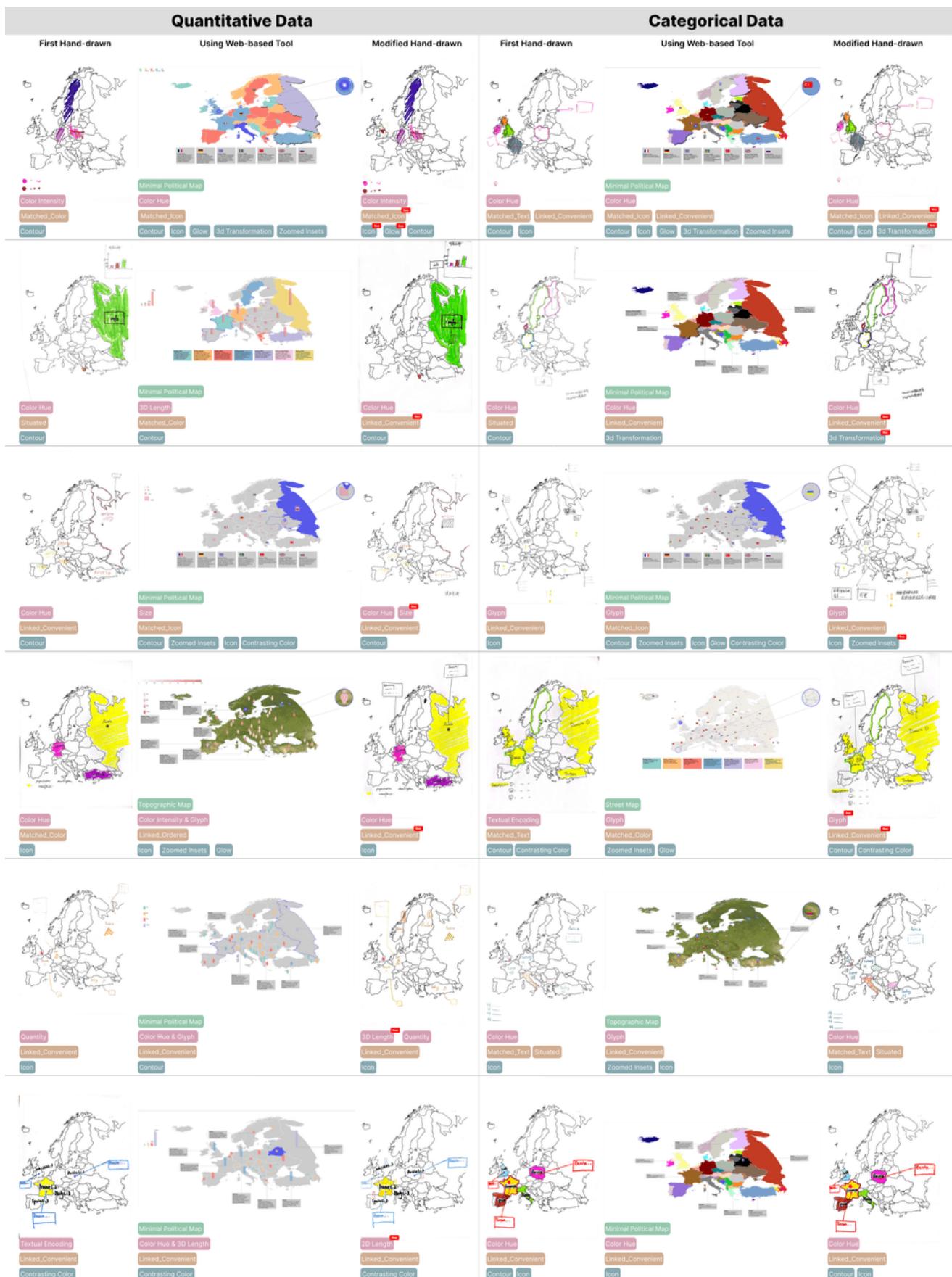


Figure 4: Geo-infographics Created by Users

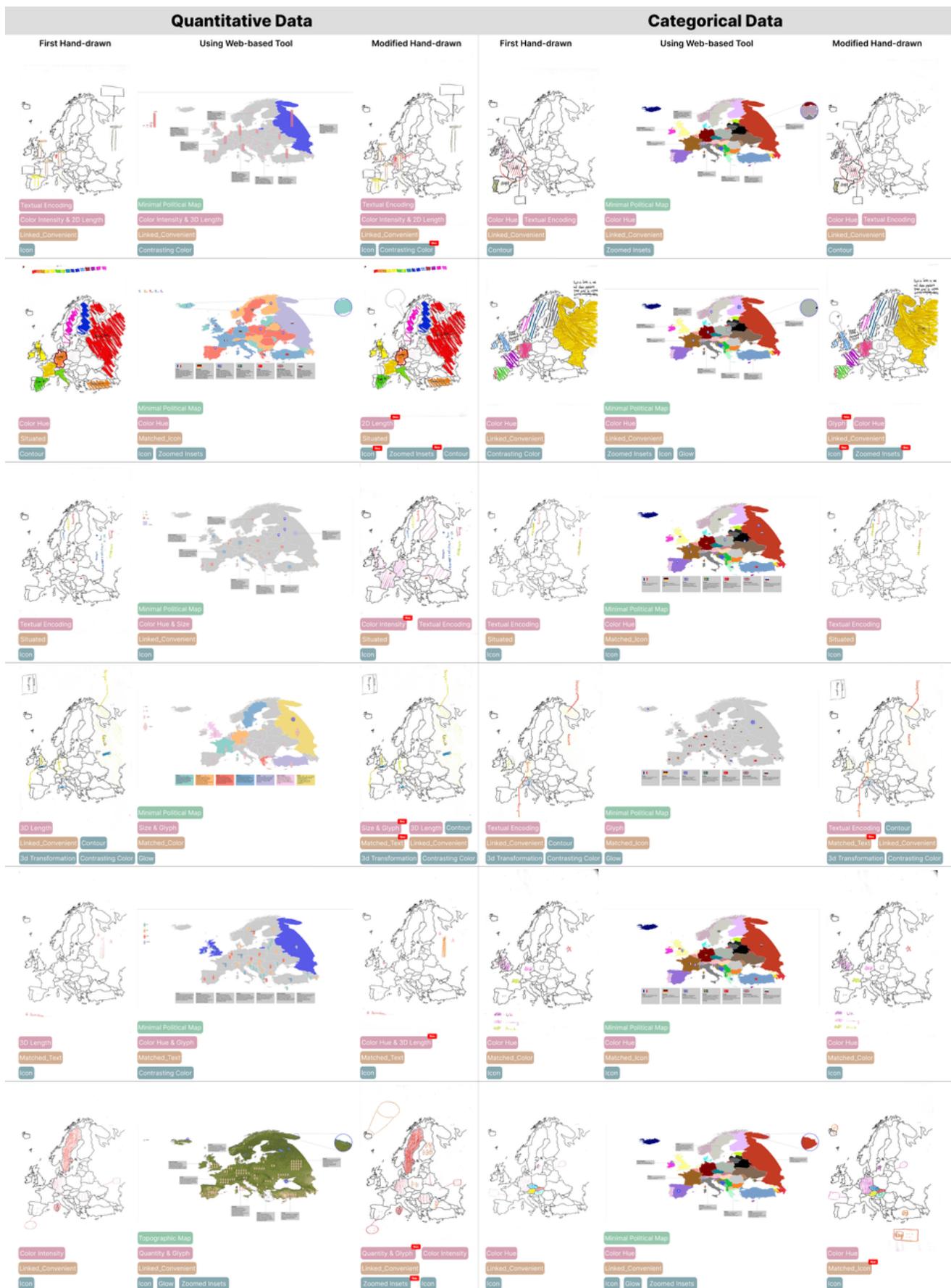


Figure 5: Geo-infographics Created by Users