Identifying Spatial Patterns on Choropleth Maps: A Comparison between humans and deep learning models

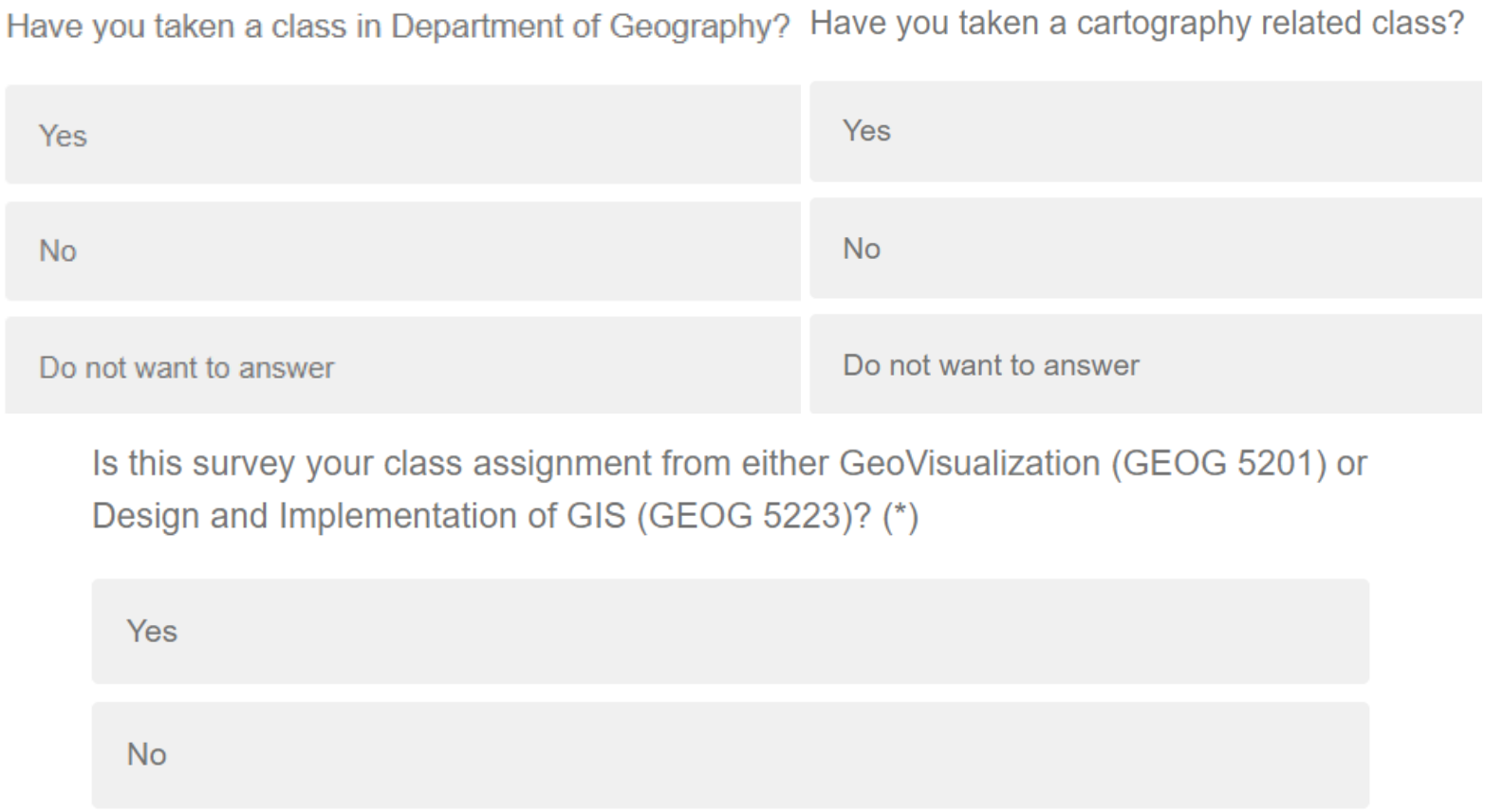
Survey Experiment Instruction (Tentative)

Introduction: What's included here

- Slides included here represent an overview of the survey.
- Each experiment contains five sections:
  - Informed consent page
  - Survey experiment instruction
  - Background information
  - Questions for maps
  - Completion code
- We will introduce the contents in background information, questions for maps, and completion code in this instruction.

Background information

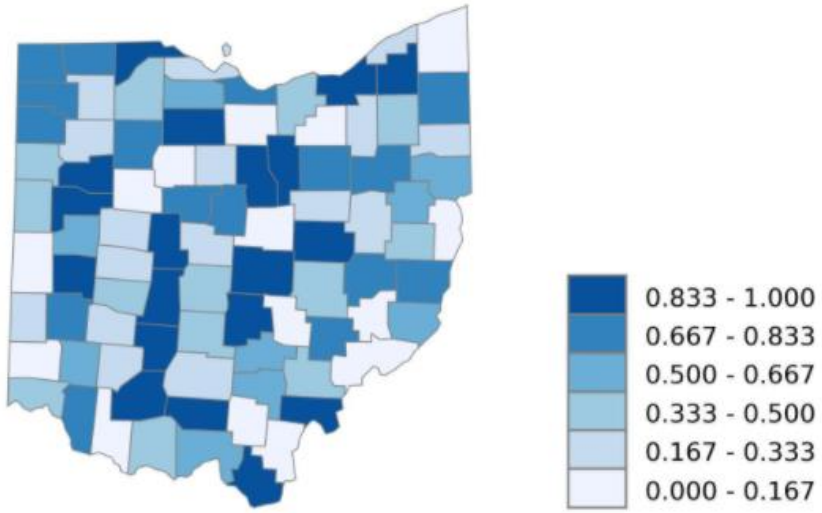
The participants will be asked three questions about their educational background in geography and cartography and about whether the survey is a class assignment.



Questions for maps

- Participants will be presented two questions for one map in one page.
- There are totally 16 maps and 32 questions in 16 pages.
- Participants must answer the two questions for one map before continuing to the next page with the next map and questions.

Read the choropleth map to answer the following two questions.



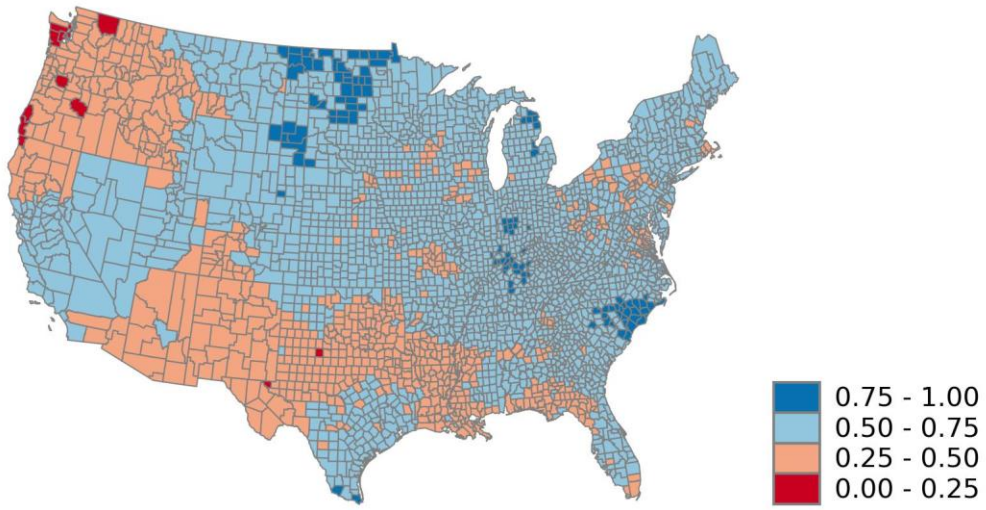
Is the phenomenon represented by the visual symbols (colors) concentrated in some area? (*)

- Yes
- No

Do the values tend to occur near their similar values or different values? (*)

- Near their similar values
- Near different values
- No obvious association shown in the map

Example answers



Is the phenomenon represented by the visual symbols (colors) concentrated in some area? (*)

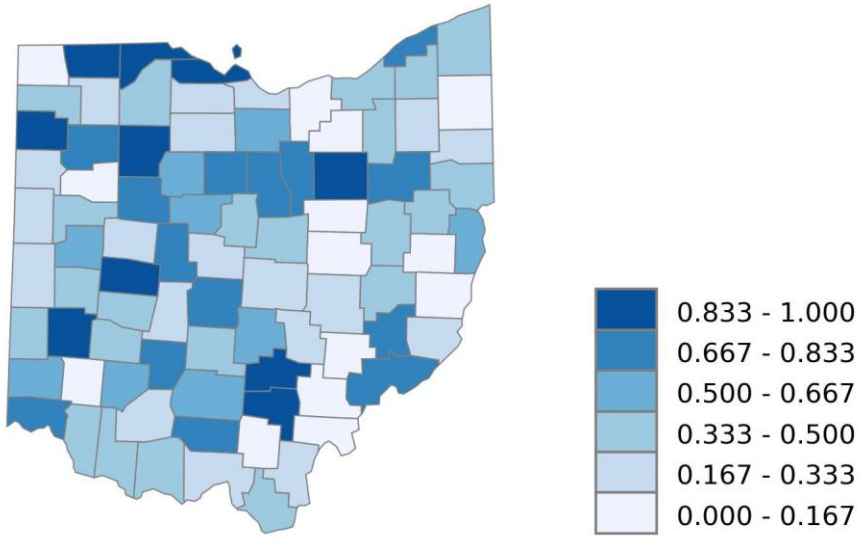
Yes

No

The same colors rendering U.S. counties are concentrated in some area.

For example, the light red color is concentrated in the north west and south of the conterminous U.S.

Example answers



Is the phenomenon represented by the visual symbols (colors) concentrated in some area? (*)

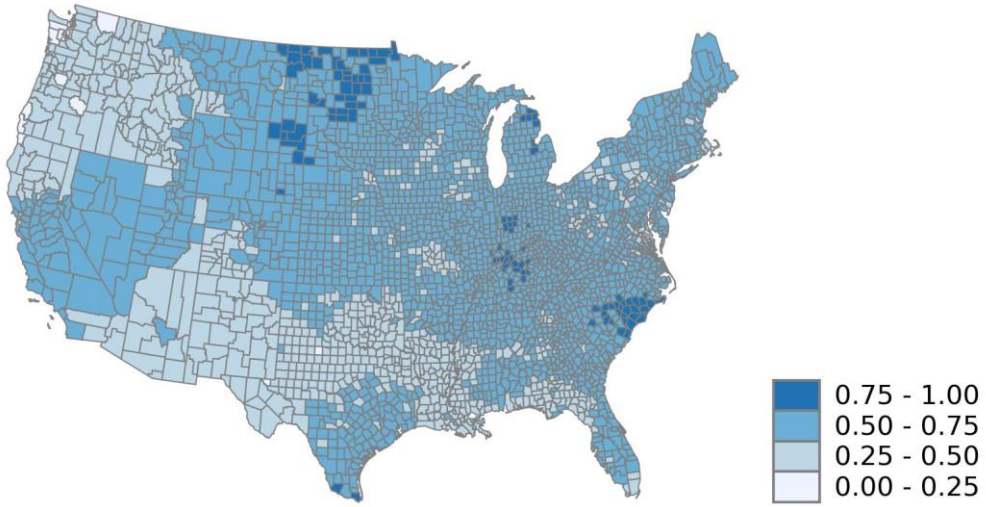
Yes

No

The color for each class scatters over Ohio.

There is no significant concentration in this map.

Example answers

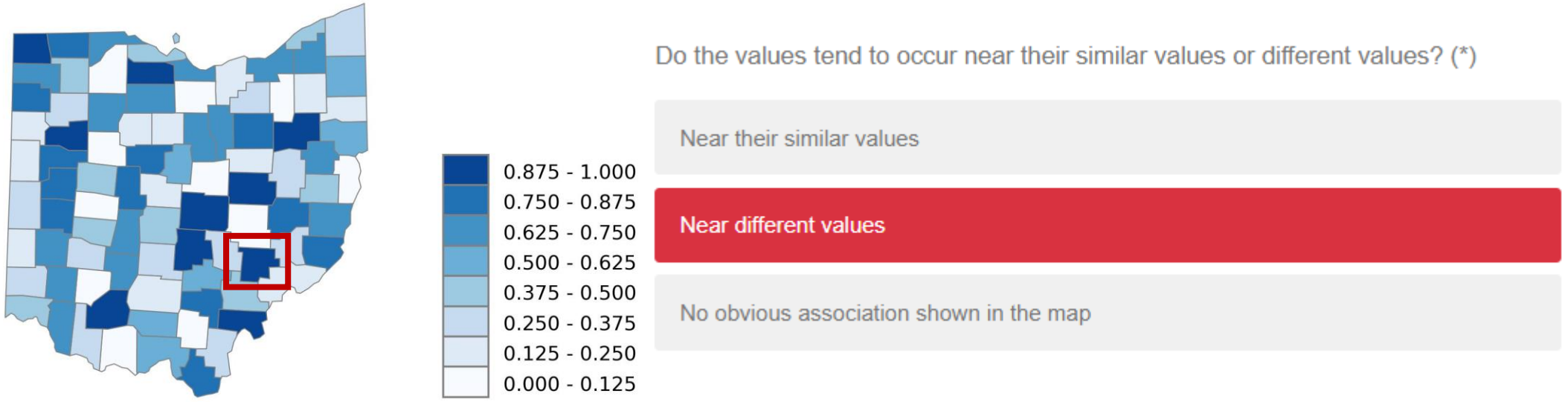


Do the values tend to occur near their similar values or different values? (*)

- **Near their similar values**
- Near different values
- No obvious association shown in the map

The same colors rendering U.S. counties occur near their similar values such as the light blue color in the north west and south of the conterminous U.S.

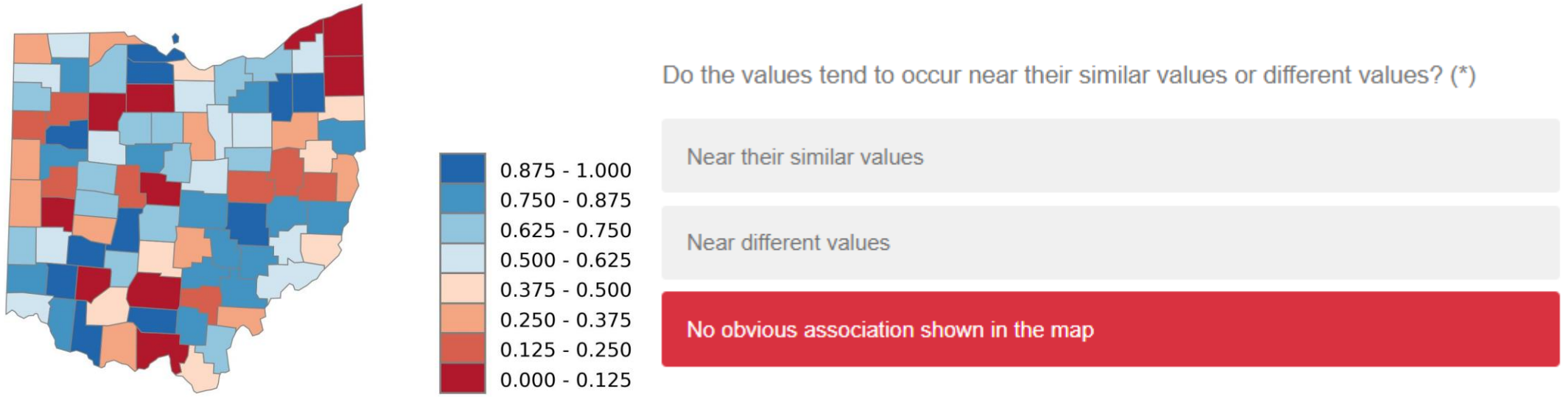
Example answers



The values occur near different values.

For example, the surrounding counties of Morgan county (red box in the map) are small values while Morgan county is rendered with a high value.

Example answers



There is no obvious association shown in the map.

The surrounding counties of most counties include both high values and low values

Completion code

- If the participant is a student in the geography classes, GEOG 5201 or GEOG 5223, there will be a completion code generated randomly at last.
- The completion code will be copied and submited in his or her Carmen system, serving as the proof of completion of extra homework.

This is your completion code:

BUCB-292C-Q73A-3E4K

Please copy the code above to submit your homework in Carmon.