SGO1910 – Introduction to Geographical Information Systems (GIS) Exam

The exam consists of three parts:

- Part 1 involves five questions (30 % of grade)
- Part 2 involves two questions (35 % of grade)
- Part 3 involves answering one out of two questions (35 % of grade)

Part 1 (30 % of the grade)

Give a short answer to *all* five questions. You are welcome to use examples.

Q1. Describe the modifiable area unit problem (MAUP) (max 150 words)

Q2. Explain vector and raster data, give an example of each, and compare the two (max 150 words)

Q3. Describe the four types of distortion that can occur in different map projections (max 150 words)

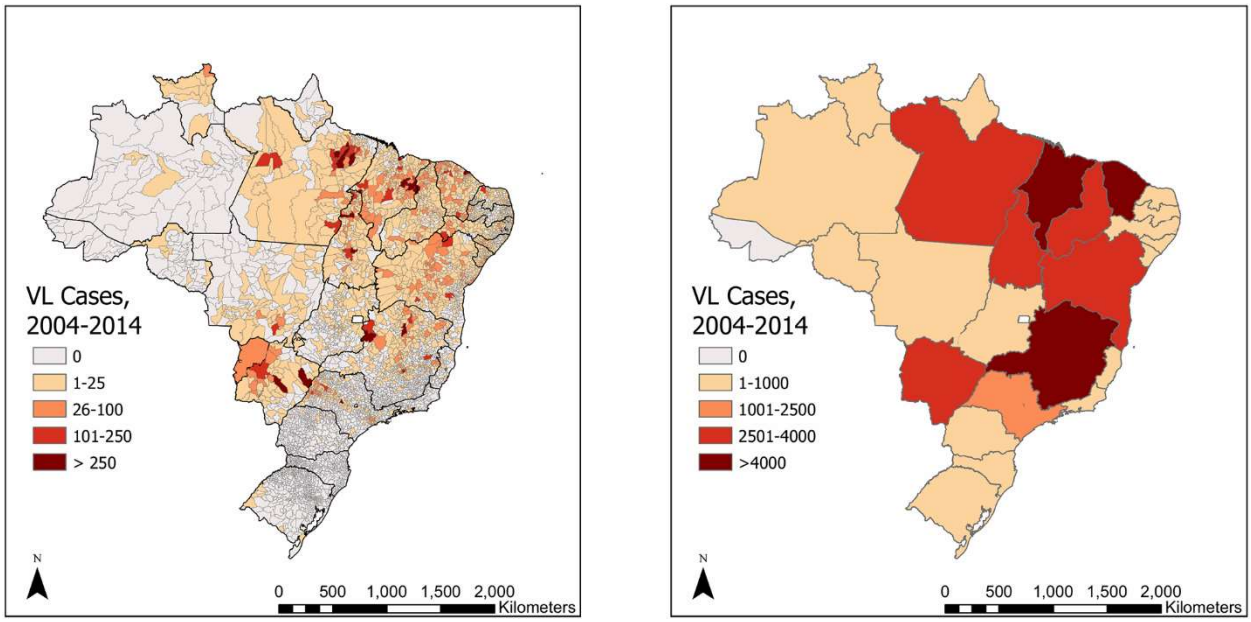
Q4. Describe Tobler's first law of geography (max 150 words)

Q5. Describe three different types of research designs used in spatial analysis (max 150 words)

Part 2 (35% of the grade)

Answer *both* questions.

The following maps are both of 'Visceral Leishmaniasis' (VL) cases (a disease caused by parasites) in Brazil between 2004 and 2014.



(a) (b)

Source: Servadio et al. 2020. Information differences across spatial resolutions and scales for disease surveillance and analysis: The case of Visceral Leishmaniasis in Brazil. PLOS ONE.

Q1. Describe the maps and interpret the main pattern of results (max 200 words)

Q2. Explain why the two maps look different and how can these differences be problematic (max 300 words)

Part 3 (35% of grade)

Write an essay answering *one* of the questions.

Q1. What is a network and how can they be important and used in spatial analyses? (max 500 words)

Q2. What is spatial autocorrelation and what are the differences and meanings of analyses of *global* and *local* spatial autocorrelation (max 500 words)