Exercise: Designing Natural Experiments

In groups of 3, you will be assigned one of the broad research questions and specific research settings below. Answer the following questions:

1. **Broad Research Question:** *How do national celebrations affect political behaviour?*

   Specific Research Setting: *On 4th July in the USA, American school children generally participate in annual parades through their local streets, waving flags and singing the national anthem.*

2. **Broad Research Question:** *How does the presence of election monitors affect electoral results?*

   Specific Research Setting: *For Indonesia's election yesterday the EU monitoring mission organized 1,000 observation teams for 800,000 polling stations. No Indonesians were involved in the planning of the observation activities.*

3. **Broad Research Question:** *Does the gender of local leaders affect public policy choices?*

   Specific Research Setting: *In India, one-third of all villages were randomly 'reserved' so only women can compete in the election. At the next election, the reservation rotates on to a different village (so each village has a reservation every 12 years).*

4. **Broad Research Question:** *Does bombing villages encourage or deter rebel attacks?*

   Specific Research Setting: *In the 2000 to 2005 Chechnya conflict, Russian artillery fired on some Chechen villages but not others using an unpredictable military strategy designed to disrupt rebel activities. Russian soldiers were often drunk on duty.*

Questions

1. What is the treatment assignment mechanism in this specific research setting?
2. Who controls treatment assignment?
3. Identify a component of the treatment assignment mechanism that is independent of potential outcomes. Is this component random or 'as-if' random?
4. What *quantitative* evidence could we use to assess whether this component of treatment assignment is truly independent of potential outcomes?
5. What *qualitative* evidence could we use to assess whether this component of treatment assignment is truly independent of potential outcomes?
6. If we used this component of treatment assignment as a natural experiment, how would the treatment and control groups be defined?
   (a) Is this the treatment we are really interested in to understand our broad research question?
   (b) Is this the comparison we really want to make to understand our broad research question?
7. In your proposed natural experiment, what data sources could we use to measure treatment and the outcome?
8. In your proposed natural experiment, what are the sample and the population? Is this a relevant population for understanding our broad research question?
9. How would you propose to analyze the data from your natural experiment? (What regression would you run?)
10. What is the risk of spillovers or interference between treated and control units (SUTVA)?
11. How generalizable are the results of your proposed analysis?