Population Growth And Economy - Research Questions and Project Planning

1. Research Questions:
   1. What has been the influence of population change on the economy of the area until now?
   2. What happens to the population of an area when it experiences a sudden economic change?
   3. How is the economy of areas that are going to be affected by overpopulation in the short-term future going to change?
   4. How is the economy of areas that are going to be affected by overpopulation in the long-term future going to change?
2. Project Planning:
   1. Study research papers on similar topics.
   2. Study ways of measuring the financial state of an area and decide which ones are going to be used.
   3. Study techniques for statistical analysis that are going to be used.
   4. Decide which population metrics are going to be used (age, male/female ratio, etc.)
   5. Study researches that project how the world population will change in the future.
   6. Answer 1.a and 1.b:
      1. Decide from which historical period and onwards data can be considered reliable.
      2. Gather data to be used both for 1.a and 1.b:
         1. Examples where the population of an area has changed.
         2. Examples where the financial state of an area has experienced a sudden or unexpected change.
      3. Pre-process the data and perform the decided statistical analysis on it
      4. Evaluate and interpret the results:
         1. Conclude to what extent a change of population actually affects the economy of an area.
         2. Conclude to what extent a sudden change in the economy of an area affects its population.
         3. Decide if certain events(historical, natural) that affect the population/ economy have a specific type of effect on the other.
   7. Answer 1.c and 1.d:
      1. Decide which predictions about the populations to use/ make new predictions.
      2. Decide which machine learning models will be implemented.
      3. Decide which evaluation metrics are going to be used.
      4. Decide which quantities are the target of the models.
      5. Decide which part of the data gathered in 2.f.ii.1 is going to be used as a learning set.
      6. Train and evaluate machine learning models to decide which one(s) should be used for predictions.
      7. Use the selected model(s) to make predictions for the economy of areas whose population predictions have been derived previously.
      8. Interpret the results of the predictions and reach conclusions:
         1. Find which areas will benefit or drawback financially from their change of population.
         2. Try to identify which areas overpopulation is projected to affect the most.
   8. Write a research paper that summarizes the process and demonstrates the research outcomes