California State University, San Bernardino

CSUSB ScholarWorks

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Measuring sustainability (GEOG 100 Intro to Human Geography)

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Recommended Citation

GEOG 100: Sustainability Labs.

Lab 1: Economic and Social Sustainability

Objective: To understand the trends in affordability and access to the California State University system and how these affect different social groups.

Reading: "Equity Interrupted: How California is Cheating Its Future" a study done by the California Faculty Association (CFA), the faculty union of CSU.

Goals: To summarize the data in the reading focussing primarily on two major trends:
Economic trend: Funding of the CSU system and its affordability (tuition and fees) over time.
Social trend: How the demographics of the CSU system is changing over time.

Skills: The ability to read and organize data to analyze trends over time. Create a survey instrument based on the available data and the analysis. Gather new data using the survey and analyzing that data.

Steps:
1. Read the report "Equity Interrupted" and summarize its findings about the following:
    a) How much of California's budget is spent on the CSU system over time.
    b) How much does it cost to attend the CSU over time.
    c) What are the changes in the demographics of CSU students over time.

2. Create a five question survey that uses the data you summarized as multiple choice answers to questions you make up that try to get respondents to think about the changes you summarized.

3. Find at least ten students on the CSUSB campus and ask them the five questions. Also collect their demographic data anonymously (age, gender, race/ethnicity).

4. Analyze and compare the data you collected from your survey with the study data. How well do the students surveyed understand the economic and social trends taking place in the CSU?

5. Create a short report summarizing the economic and social sustainability of the CSU and our awareness of it.

Lab 2: Environmental Sustainability / Justice

Objective: To understand the relationship between environmental sustainability and environmental justice, and to learn how these are measured.

Data source: [CalEnviroScreen](#) a data set created and updated by the state of California Office of Environmental Health Hazard and Assessment (OEHHA). The data set is linked to state policies that seek to alleviate the burden of environmental pollution faced by disadvantaged communities.

Goals: To summarize and interpret the environmental justice data provided for the communities where students live and/or come from.

Skills: Ability to collect, compare, and analyze data.

Steps:
1. Go to CalEnviroScreen and find the neighborhood where you live or are from. Collect the pollution burden score for that neighborhood, noting which factors of pollution are the greatest. Also, collect demographic data (whites, non-whites) for your neighborhood.
(If you live on campus, you can use the neighborhood containing CSUSB.)

2. Add the data for your neighborhood to the dataset we are collecting for the entire class in Google Sheets. Once this dataset is complete, we will be able to demonstrate the link between the pollution burden and ethnicity.

3. Compare the data for the pollution burden with the data of ethnicity. Describe the relationship.

4. Using a Pearson Correlation in Google Sheets we can see if there is a statistically meaningful positive correlation between the pollution burden and non-white ethnicity. If there is we can say that environmental justice is a problem in our region.

5. Summarize your findings from the data analysis.

Lab 3: Creating a Sustainability Index

Objective: To create a way to combine the economic/social sustainability analysis from Lab 1 with the environmental justice analysis from Lab 2 into a meaningful numerical index score.

Data source: Various assigned readings on sustainability indices.

Goals: To examine the various sustainability indices already in use and figure out a way to use them for our own data.

Skills: Quantitative reasoning: Thinking critically about how different numerical indices are created and whether they fit our data.

Steps:
1. Read about the existing sustainability indices and think about whether those, or parts of those, can be used to construct our sustainability index.

2. Test whether our data fits the existing sustainability indices.

3. In case it does not, create another plausible index.