4.2) DEVELOPMENT AND QUALITY OF LIFE

Objective: This data gathering exercise allows students to compare how culture and socio-economics affect quality of life and resource consumption worldwide. This provides students with a basis for understanding their own nation's relationship with the rest of the world.
Video instructions: https://vimeo.com/481038436 and https://vimeo.com/481043159

Introduction: How do we comprehensively measure the well-being of human society? What questions need to be asked? Pakistani economist Mahbub ul Haq (1934-1998) developed the "Human Development Index" (HDI) with this goal in mind. The HDI incorporates data on health, knowledge, income, poverty, gender inequality, human security, and environmental sustainability into one number that ranges from 0 to 1 (*1*).

In the 2010 report that included 169 countries, the U.S. ranked 4th and Norway ranked 1st with scores of 0.902 and 0.938, respectively. Zimbabwe ranked last with a score of 0.140. In 1990, this African nation ranked near the middle, with 40% of the evaluated countries scoring lower than Zimbabwe. Its sharp decline over the last two decades can be attributed in large part to corrupt land redistribution policies that devastated Zimbabwe's agricultural output during the 1990s.

Based on his observations of people living in pre-industrial societies, naturalist Alfred Russell Wallace (1823-1913) came to regard the human brain not as a product of natural selection but as "an organ that seems prepared in advance, only to be fully utilized as [humanity] progresses in civilization" (*2*). In an era in which policy makers hesitate to discuss the root causes of underdevelopment that touch upon deeply held cultural beliefs, it helps to recall how Alfred Russell Wallace was able to objectively discern the positive and negative roles of culture, with observations that were not tainted by the racial hubris of his times or the political correctness of our times. Only when policy makers are capable of circumventing such fallacies can surveys such as the HDI serve as an actual means for improving human welfare.

Literature Cited:
1. United Nations. 1996. *Reflections on Human Development*. Oxford University Press.
2. Wallace, A.R. 1870. *The Limits of Natural Selection as Applied to Man.* Contributions to the Theory of Natural Selection: A Series of Essays." pp. 332-71. Macmillan, London.

Procedure: Choosing data sets for your graphs:
Follow the video instructions and make six scatterplot graphs and insert them into a text file (like word or pdf). Give each graph a title, axis labels, a trendline, and a caption describing the trend and the reason for this relationship between x and y (Fig. 1).

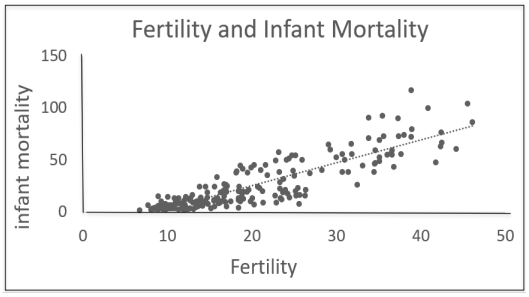

Fig. 1: *As birth rate increase, infant mortality increases. This relationship is expected because people in less affluent nations usually have more children.*

Graphs:
Use the spreadsheet to test numerous relationships. Whenever possible, use x-axis for the presumed independent variable (cause), and the y-axis for the presumed dependent variable (effect). In some cases the cause and effect will be hard to discern because both x and y may be dependent on a third factor. For example, the relationship between fertility is clearly not one of "cause and effect" because having more children does not usually result in a higher percentage of the children dying. This correlation occurs because people in less affluent nations with poor health care on average have more children.

A few suggested combinations are listed below. Note the strength of the correlation between the x and y axis in each graph. Is there a pattern or just a random distribution of points? If there is a pattern, note the shape of the line that is indicated by the clustering of the points. Is it trending upwards or downwards? Is it straight or curved? Which points are outliers? Make sure your caption describes this relationship between x and y.

Below are a few suggested combinations. You may not use the combinations that are crossed out because these are presented in the instructions and video:

1. Quality of Life vs. Quality of Life (example: Infant mortality vs. Life expectancy)
2. Energy Use vs. Energy Use (example: Electricity use per capita vs. Oil use per capita)
3. Policy vs. Policy (example: Economic freedom vs. Transparency)
4. Quality of Life vs. Demographics (example: ~~Infant mortality vs. Birth rate~~)
5. Economics vs. Demographics (example: GDP per capita vs. Birth rate)
6. ~~6.~~ Economics vs. Quality of Life (~~example: GDP per capita vs. Infant mortality)~~
7. ~~7. Economics vs Energy Consumption (example: GDP per capita vs. Oil use per capita)~~
8. Policy vs. Economics (example: Transparency vs. GDP per capita)
9. Natural Resources vs. Economics (example: Oil production per capita vs. GDP per capita)
10. Policy vs. Quality of Life (example: Transparency vs. Infant mortality)
11. Infrastructure vs. Quality of Life (example: Telephone lines per capita vs. Infant mortality)
12. Energy Use vs. Quality of Life (Oil use per capita vs. Infant mortality)

Report:
Pick an outlier on your chart, point it out (Fig. 2), and then write a short report on why this nation is an outlier. Example: Equatorial Guinea (Circled on Fig. 2) is an outlier because most of its GDP is from oil and the corrupt government spends very little of this income on infrastructure and health care. Be sure to include at least one legitimate reference in your caption to support the reason as to why this country is an outlier. Post your report and graph to the online discussion and comment on someone else's post.

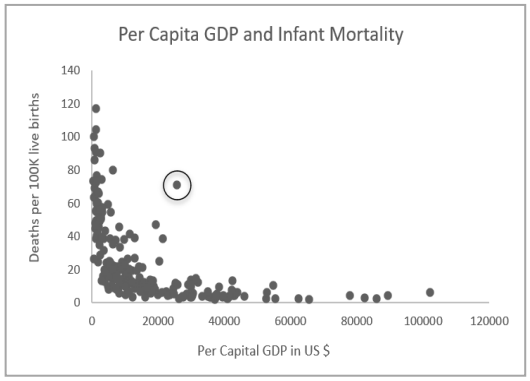

Fig. 2

Assignment Checklist:
1. Do all 6 graphs have titles, axis labels, and captions?
2. Are the graphs presented in a text file (like word, pages, or pdf)?
3. Is the outlier indicated on the graph (via circling or arrow)?
4. Does the report contain at least 5 sentences describing the nature of the chosen outlier?
5. Does the report have a properly formatted reference?
    a. Author, title, year, pages (if applicable).
    b. If web page, include all relevant information (author, title) and write down the date this website was accessed.
6. Did you post your graph and report to the online discussion.
7. Did you comment on someone else's post?