Genesis Grant

CTEC 128: Final Project

**Step 1:**

Topic: Structural unemployment persists due to a mismatch between job requirements and the skills or education levels of individuals, particularly affecting those without higher education or specialized skills, hindering their ability to secure employment.

Statistical Questions to Ask:

What are the factors that perpetuate structural unemployment?

What jobs specifically would benefit and suffer because of structural unemployment?

**Step 2:**

Source 1:

<https://www.bls.gov/cps/cpsaat08.htm>

This data source was reliable primarily because it was retrieved from the US Bureau of Labor Statistics, an official US government website. The information given also does not hold any apparent biases, it only gives the table labels and raw data.

Source 2:

<https://www.census.gov/data-tools/demo/codebook/ahs/ahsdict.html?s_topic=&s_variablelist=FSHUNGRY,GRAD,HHGRAD,HHRACE,PAP,WAGP>

This data source was reliable because it was retrieved from another official US government website, the US Census Bureau. This data also gives data in the format of only table labels and raw data, but it gives a more wide range of specific information including specific survey years, topics and subtopics.

Source 3:

<https://fred.stlouisfed.org/series/SCAD2534>

This data source was reliable because it was retrieved from the Federal Reserve Bank of St. Louis, a .org domain and includes references and authors. This source gave more insight into trends and allowed me to compare different data on the same platform in order to draw conclusions.

**REPORT:**

1. The columns needed for the research include data on education level, unemployment rate, specific professions, and occupations. These columns provided insight into relevant information regarding conclusions I wanted to emphasize and by honing in on these specific topics it allowed me to focus on specific trends and correlations that are pertinent to the research objectives. This focused approach enables a more thorough analysis of the data, allowing for clearer and more precise conclusions to be drawn.

The columns I chose to remove and neglect include specific information about individuals this would not prove useful to the research.

1. To analyze the impact of education and automation on structural unemployment, I will use several calculations, filters, and pivot tables. Firstly, I will calculate the average unemployment rate for each education level (e.g., high school, bachelor's, master's) to understand the relationship between education and unemployment. Secondly, I will calculate the percentage and titles of jobs in specific professions or occupations that are at risk of automation, based on existing research or data, to assess the impact of automation. I will filter the data to include only records related to specific education levels and professions/occupations for analysis.
2. In my analysis, I looked at how education and automation affect job availability and income. To do this, I used median earnings (the middle value of all earnings) and unemployment rates (the percentage of people without jobs). By comparing the median earnings for different education levels with the average unemployment rates, I could see how education relates to income and job opportunities. The average unemployment rates showed the overall job trends for each education level. One interesting finding was that higher education levels tend to lead to higher earnings and lower unemployment rates. This suggests that getting more education can lead to better-paying jobs and more job security.
3. When doing my analysis, I do not believe I used a measure of spread. But if I were to utilize a specific method, I would choose standard deviation. This would show me the variation in data, a higher standard deviation would show more spread from the mean, while a lower standard deviation would prove closer to the mean. I could have used standard deviation to show spread of different unemployment rates over time to help me draw further conclusions.
4. The best visualizations to present my findings would be bar charts to show data comparisons and line graphs to show trends over time. More specifically within my research, after finetuning data I utilized a bar chart to show jobs that are prone to automation (thus emphasizing certain professions are more at risk than others) and another to highlight education levels. Also, I utilized a data matrix to include my own criteria, which I used to refine the data and focus on specific aspects relevant to my analysis. Finally, I included a line graph from a reliable source to show trend and comparison of education level to unemployment rates, to prove a true correlation.

Structural unemployment occurs when there is a mismatch between the skills of the employee(s) and available jobs. People are not able to maintain their jobs based on their lack of skills, education and societal fluctuations. This is creating a problem for adults who do not have a higher level of education or skill and are looking to be employed.