Does a higher academic degree guarantee higher income?

1.1 Introduction

In the 21st century, the rise of pseudo-gurus and online influencers has sparked debates about the value of formal education. Many of these self-made personalities claim to have achieved financial success without attending university, often promoting their own courses as alternatives to traditional education. This raises an important question:

Does a higher academic degree truly guarantee higher income?

In this report, we analyze data to explore the relationship between education levels and income, examining whether higher degrees consistently lead to better financial outcomes.

1.2 Data Sources

The project utilizes two primarely datasets both from Kaggle with specific licensing and usage obligations:

1. **American Citizens Annual Income:**
This dataset provides detailed information about income levels and various demographic attributes for individuals in the United States.

2. **Global Salary DataSet 2022:**
This dataset complements the American Citizen Income Dataset by providing a broader, country-level perspective.

1.2 .1 Filtered data for analysis:

Following the succesful execution of the pipeline, an SQLite file should be generated. The dataset contains 4 columns:

- Age.Range
- Education
- Country
- Salary

Age.Range	Education	Country	Salary
Filter	Filter	Filter	Filter
40	Prof-school	US	>50K
30	HS-grad	US	<=50K
46	Some-college	US	>50K
32	Assoc-voc	US	>50K
54	Preschool	Mexico	<=50K
63	Some-college	US	<=50K
25	7th-8th	Mexico	<=50K
71	HS-grad	US	<=50K
37	HS-grad	US	<=50K

The SQL table is first filtered to include only the values that we are interested in.

This filtered dataset is then used as a reference to see whether there is a correlation between the education level and the income of the citizens.
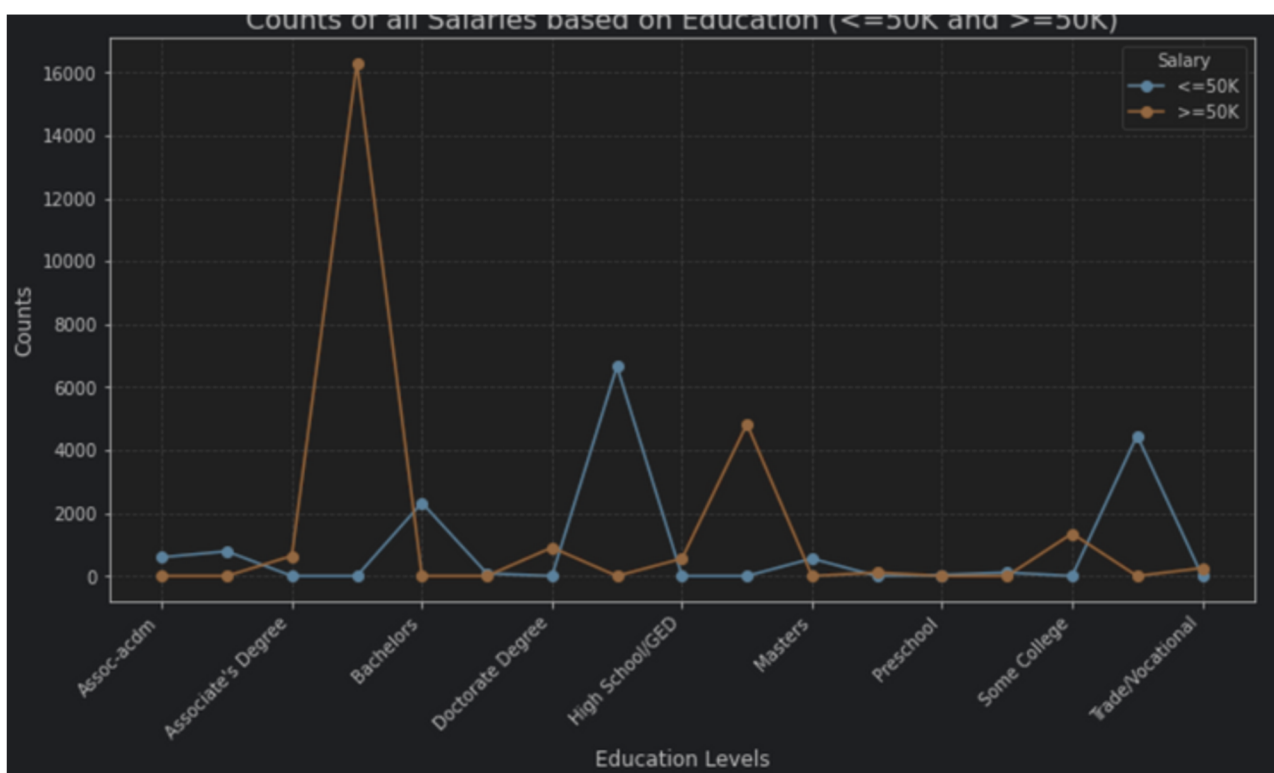
1.3 Analysis

After aggregating the data the following insights were obtained:

First of all lets take a look at the total count of the salaries.The chart depicts the counts of all individuals within two salary brackets (<=50K and >=50K) across various education levels. Also the individuals that were >50K are counted as >=50K for better representation. The same logic is applied for <50K aswell. The salary categories are represented as:

- Blue Line: Individuals earning <=50K.
- Orange Line: Individuals earning >=50K.

Figure 1: Counts of Salaries based on Education

Summary:

- There is a clear positive correlation between higher education levels and increased likelihood of earning >50K.

- The largest group overall remains individuals with a High School/GED education earning <=50K.

- Bachelor's degrees appear to be a critical threshold for transitioning into higher salary brackets, while advanced degrees further enhance earning potential but involve smaller populations.
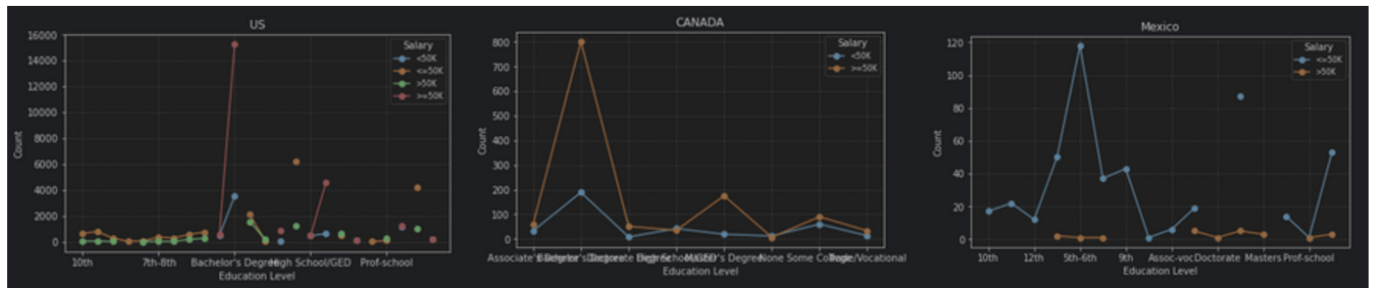
Figure 2: Selected Countries Education level Salary corellation

Summary:

- In all countries, the ≤$50K category dominates, indicating that higher salaries are less common regardless of education level.

- For certain education levels (e.g., "Assoc-voc" or "Bachelor's"), there are higher proportions of individuals earning >$50K, but only in select countries.

- Education level seems to have some influence on salary, with higher education (like "Assoc-voc" or "Bachelor's") being associated with slightly increased counts in the >$50K category.

- The data varies significantly between countries, with some showing almost no individuals earning >$50K regardless of education.

Figure 3: North America countries

Conclusion:

Education level plays a role in salary distribution, with higher education levels being associated with higher earning potential, though the count of individuals earning ≤$50K remains dominant.

Even though we do not have enough data for the sligthly poorer countries a very obvious correlation between the education level and salary can be observed.

While there are cases in the dataset where individuals achieve high earnings without holding a higher academic degree, the overall trend is clear: on average, higher academic qualifications correlate with higher income.

Claiming that university education is useless because some people achieve financial success without it is akin to responding to the statement "most people have 10 fingers" by saying, "Yes, but I know someone with 11." Exceptions may exist, but they do not invalidate the broader rule.