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Summary

Using data from the General Social Survey, this study delves into the relationships between an individual's education, their perceived social status, and their prestige score. We began by cleaning and organizing the data from 37 separate CSV files, which were chunks of a larger CSV file, focusing on those key variables such as degree, class, and prestige. We then used visual analytics to uncover insights revealing a strong correlation between educational attainment and prestige, especially when considering an individual's perceived social status.

The dataset was initially complex, which required merging, cleaning, and addressing missing data. For the purposes of class, we treated no_class as an na because it was not needed for our research question.

Our visualizations, including density graphs that provided insight into the distribution of the surveyed population among different social classes, box plots that told us about the quartiles of data and outliers, and grouped bar charts to visualize three different variables at once. Together, they highlighted trends such as the prevalence of a high school diploma being the most common degree obtained or the dominance of "working class" and "middle class" among self perceived social statuses. Notably, those with higher degrees tended to have higher prestige scores while those of varying socioeconomic class with the same degree felt similar prestige scores.

This project emphasizes the significant societal impact of education and social status on the prestige of an individual's occupation. Building on these preliminary findings, we recognized the influence of societal perceptions on an individual's sense of prestige. While the data hinted at education being a pivotal determinant in shaping one's self view of prestige, our next steps involved diving deeper into the actual analysis to validate and verify these correlations.

Data : 2 pages -

The data used for this analysis is sourced from the General Social Survey (GSS), containing information on education, prestige, and perceived social class. The dataset comprises a broad range of sociodemographic and attitudinal variables collected from a nationally representative sample of individuals. It replicates these questions yearly– providing a collection of data on social trends overtime.

This wealth of information includes details about individuals' educational backgrounds, their career and job-related aspects, and their subjective assessments of their own social status.

The dataset is, therefore, a powerful tool for researchers and social scientists to explore and analyze various social trends and phenomena over time.

This analysis focuses on three variables: *degree*, which is the highest degree obtained by the respondent, *prestige*, which is a score assigned to professions based on a rating system developed by NORC (National Opinion Research Center). Using a nine-step ladder, the prestige scores in the GSS studies were formed by asking respondents what the social standing of various occupations were to them. The last variable involved is class; it is the respondent's self perceived social standings.

For *degree*, before any data cleaning or filtering, the original dataset consisted of a total of 72,230 records, with respondents providing their educational qualifications. Within this dataset, there are six unique options that respondents could select as their highest level of education: *"bachelor's," "less than high school," "high school," "graduate," "associate/junior college,"* and the presence of missing values ("nan"). Among these options, "high school" emerged as the most frequently chosen degree level. It was selected by 36,446 respondents, and the overall data indicates that most respondents did not continue school after getting a high school diploma.

Prestige level captures the perceived social prestige or status of the respondent's occupation. Before any data cleaning or filtering, this variable contained a total count of 24,303. In this dataset, the "prestige" variable employs a standardized prestige score, calculated as a straightforward mean value of the prestige ratings assigned to various occupation categories. These ratings are then converted to a scale ranging from 0 (representing the lowest prestige level) to 100 (representing the highest prestige level). The "prestige" variable exhibits diversity, encompassing 63 distinct numeric values assigned to the participants' jobs. However, the most prevalent prestige score among the respondents was 50.0. This score was selected by 1,913 individuals, signifying the prominence of this middle-of-the-road prestige level within the dataset. Additionally, it's worth noting that there were instances of missing data ("nan") in this variable.

The self-perceived social class is divided into six distinct categories, each offering a unique perspective on how individuals assess their societal status. These include “middle class,” *“working class,” “upper class,” “lower class, “no class,”* and instances of missing data denoted as ("nan”). Prior to any data cleaning or filtering, the *class* variable encompassed a total of 68,894 records. Within these six social class categories, "middle class" stands out as the most prominent. To be specific, it was the most frequently chosen category, with 31,014 respondents identifying themselves as part of the middle class.

During the process of handling and preparing the data, several challenges were encountered. First, dealing with a large dataset required reading it in chunks, making it more manageable. To begin, the dataset's substantial size necessitated a chunked approach to reading the data. This method allowed for more efficient management of the data's scale. While this solved the issue of size, it brought about the challenge of consolidating these fragments into a

coherent dataset. To address this, a new dataframe was created, enhancing the organization and overall cohesion of the data.

Another challenge emerged in the form of the "prestige" variable. The lack of comprehensive documentation regarding its meaning and calculation required a deeper dive into past documents and discussions to gain insight. This step was pivotal in fully comprehending the variable's significance within the dataset.

Initially, the consideration was given to replacing missing values with "Unknown" to maintain consistency across the dataset. However, upon further evaluation, a different approach was adopted. It was decided to drop rows with missing values and also exclude any instances where "prestige," "educ," and "class" were included as unique values. This choice was made because these variables were not essential for the analysis and were not part of the options provided in the CSS codebook for their respective questions. This streamlined the dataset and ensured that only the relevant data points were retained for analysis.

Data consistency was also a vital concern. An inconsistency was detected in the "prestige" variable, where certain records included the term "prestige" as a category. To maintain uniformity, I standardized the variable by eliminating such anomalies

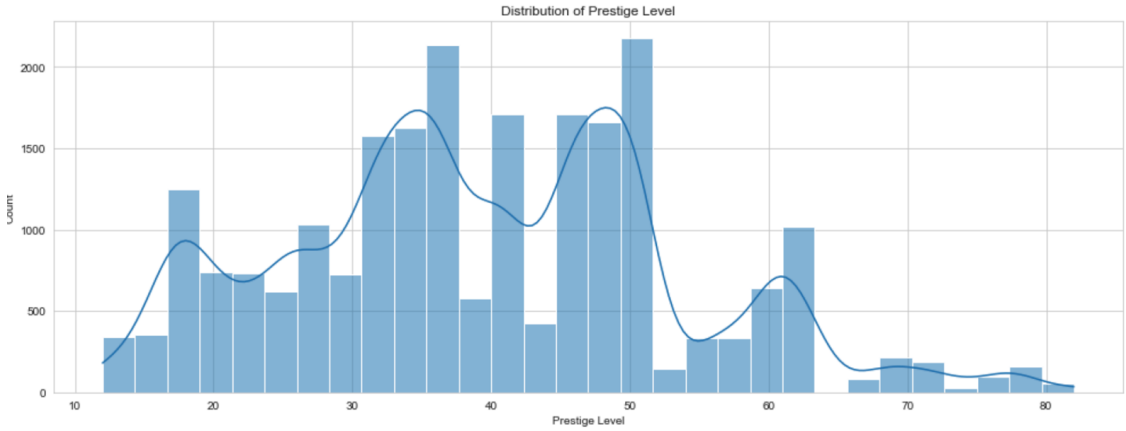
Lastly, to facilitate exploratory data analysis (EDA) and visualization, "no_na" versions of variables were created. These versions excluded records with missing values, yielding cleaner data for EDA, enabling a more focused analysis of patterns and relationships.

Results:

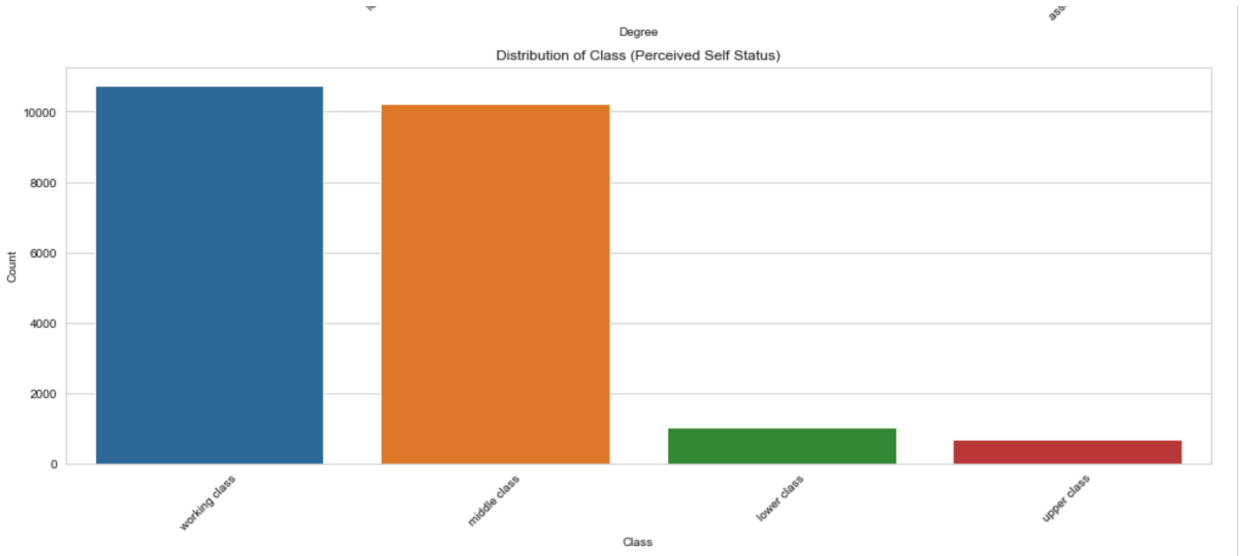
Visualizations played a paramount role in our analytical process. Initial plots highlighted the educational distribution among participants, with a significant inclination towards high school completion or lesser education. In terms of perceived social status, the "working class" and "middle class" emerged as predominant. However, the most illuminating insights arose from box plots juxtaposing degree and class with prestige scores. An evident trend suggested individuals with advanced degrees often associated with higher prestige scores. This trend was paralleled in perceived social status, where those identifying as belonging to the upper echelons exhibited elevated prestige.

Our exploration underscores the profound societal implications of education on an individual's perceived value and societal standing. Although our methodologies were robust and meticulous, it's essential to approach survey-based datasets with caution, acknowledging potential inherent limitations or biases. Reflecting upon these findings, there's an evident horizon brimming with opportunities. Integrating more socioeconomic variables, adopting advanced statistical analyses, and discerning causality beckon as tantalizing avenues for future research endeavors.

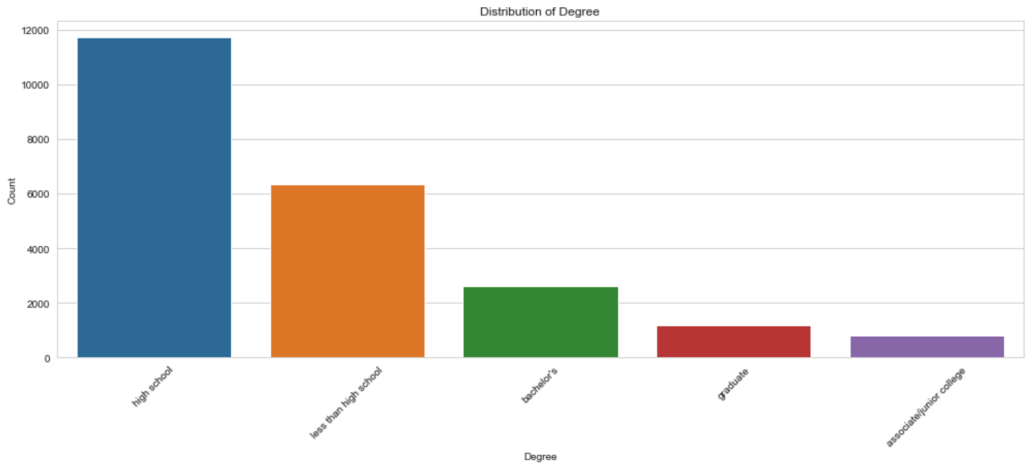
Visualization



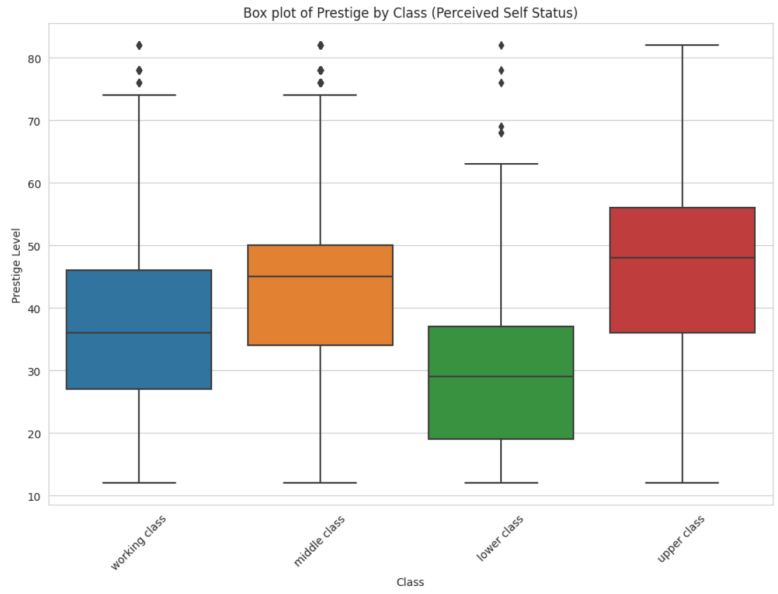
The prestige histogram, complemented by the Kernel Density Estimation (KDE), shows the range and commonality of prestige scores, offering insights into the typical occupational prestige levels of the survey participants. It's noteworthy that a larger proportion of individuals perceive their professions to have a prestige score below 50 on a scale of 0-100 compared to those who rate their prestige above 50.



The distribution of class amongst the population shows a large percentage of people who perceive themselves as working or middle class. Only a small percentage of the population perceive themselves as upper class.



The distribution of degrees within the population reveals that the majority of respondents hold a high school degree, surpassing all other categories. Notably, there are more respondents with less than a high school degree than those with college or graduate-level degrees

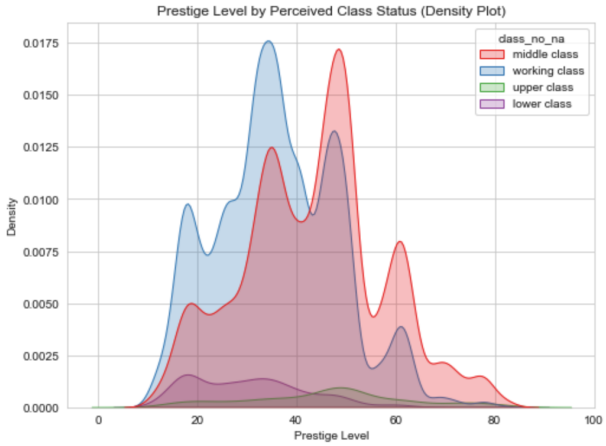


The first figure shows the relationship between prestige score and perceived self status. Those who classify themselves as “upper class” have the highest prestige level, with a median of 48. Those who classify themselves as “working class” and “middle class” also have relatively high prestige levels, while those in the “lower class” have lower prestige levels, with a median of 29. While this trend may not be as pronounced as the one related to education levels, there is nonetheless a trend showing people who see themselves in a higher class having higher prestige scores.

There were distinct differences in the median for the various class levels established. For instance, consider the lower class and upper class. There is a significant difference in the medians where the upper class has approximately a prestige level of 50, while lower class has a

prestige level of around 30, indicating that there may be a trend between one's socioeconomic status and the prestige level of their occupation.

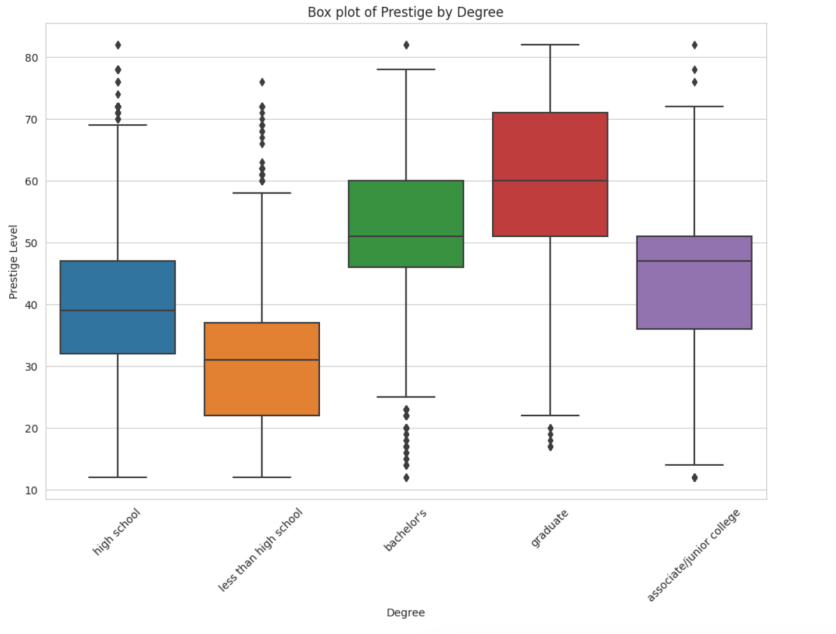
It is interesting to note that the prestige levels (medians) for the upper class and middle class are closely aligned, showcasing a similarity in the prestige of their respective occupations. In contrast, when we compare the maximum values, a more extensive range of prestige scores becomes apparent within the upper class category. The same can be said when comparing lower and working class.



This density plot backs up the claims of our other graphs findings. The highest density areas within each class align with higher prestige levels as the classes increase from lower class up to upper class.

This plot shows that our sample data might not be the best as there are very few data points for the lower and upper class, whereas for the middle and working class there are quite a few entries. This could however, could be attributed to the fact that in the population of the United States the majority of citizens lie within the middle or working class.

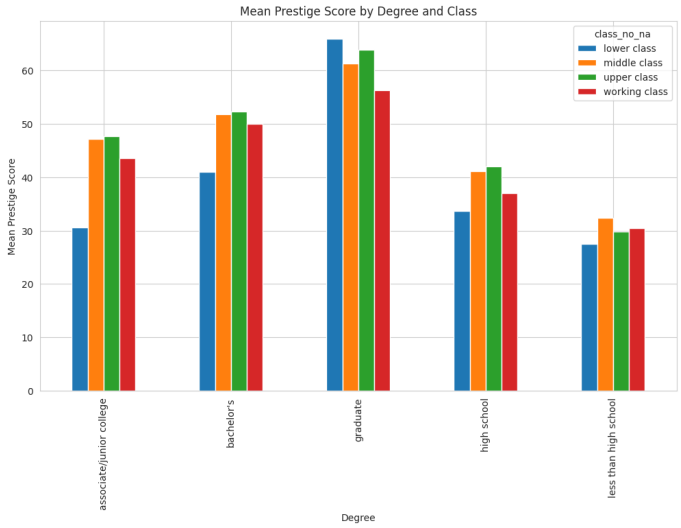
The low density specifically within the upper class could be the reason the interquartile range of the upper class in our first box plot was so large. Perhaps with better data or more data points to account for the data could change and give us a better understanding of what the true prestige levels of upper class citizens is.



The second box plot shows the distribution of prestige based on the highest level of education achieved. There is a clear trend showing those with higher degrees of education having higher prestige levels. Here, the median prestige level for those with a graduate degree is 60, while the median prestige level for those who did not complete high school is 31. There is a clear trend, from the lowest to highest levels of education, that higher degrees of education correlates with higher prestige levels.

From this graph it is clear that with each level of higher education completed prestige levels climb drastically in some cases. This is especially evident when comparing associate/junior college level to the highschool level. Despite having very similar ranges and interquartiles the average prestige level for those with an associate or junior college degrees is about 8 points higher than those with only a highschool diploma. This is the second highest gap between consecutive grade levels only being surpassed by the gap between a graduate degree and a masters degree. This shows how important any college level degree can be in terms of obtaining higher prestige in one's field of work.

Another interesting thing to note when analyzing the graph is that despite having quite different interquartile ranges the average prestige level between associate/junior degrees and a bachelor's degree were not extremely different. This could show that although level of education is important in determining prestige level, performance once in the real world or job market can definitely play a factor into prestige level as well. If someone with an associates degree were to outperform another person with a bachelor's degree their prestige level could very easily be greater than the person with a bachelor's degree.



The grouped bar chart presents another interesting representation of educational attainment across social classes and contrasts it with the mean prestige score in a simple way. An interesting observation is the fact that there is a consistent upwards trajectory of prestige as one progresses throughout educational levels. Regardless of the class category which remains mostly consistent across each degree type.

While each class demonstrates this trend, it's important to note that the prestige values across different classes are relatively similar for the same degree. This underscores the main idea that within the context of the dataset, the degree of education is a dominant influencer of the prestige an individual feels they possess, often overshadowing the self-perception of class. Individuals across the same degree type are noted to have similar prestige levels as demonstrated by the bar chart in most cases. For example, a middle class individual with a high school diploma feels a similar amount of prestige compared to another low class individual also with a high school diploma.

The uniformity across classes emphasizes the universal recognition of higher education in modern society. It also gives a hint towards those of lower classes that education is one of the best methods of social mobility as irrespective of one's background they are able to elevate themselves in terms of prestige. However, while education is a significant factor, it's essential to keep in mind the fact that prestige is impacted by a multitude of factors and that some factors may be potentially outside of the scope of this dataset.

Conclusion:

This project aimed to investigate the relationships between an individual's educational background, their perceived social status, and their associated prestige score using data from the General Social Survey.

The study focused on three key variables: degree, prestige, and class. Before data cleaning and filtering, the dataset was substantial, consisting of over 70,000 records. This presented several challenges such as data size management, variable understanding, and missing data handling. After a thorough data cleaning, we were able to adequately prepare the dataset for analysis.

The preliminary findings of the analysis unveiled significant correlations between educational attainment, prestige, and perceived social status. Using visualizations, we were able to better highlight these relationships. Notably, individuals with advanced degrees tended to have higher prestige scores, reflecting the societal significance of education on one's perceived value and standing.

In addressing potential criticisms of our research, it is important to acknowledge that this analysis relies heavily on survey data, which inherently comes with limitations. Surveys are subject to response bias and the limitations of self-reporting. While every effort was made to clean and manage the data, there may still be residual issues that could impact the accuracy of the results. Moreover, the analysis does not establish causation but rather highlights correlations. Additionally, the interpretation of "prestige" and "class" can be subjective, however we cleaned and selected our data to enhance the reliability and consistency in our results.

For this project, one thing differently that could have been done is to confirm that data from 2021 was excluded from the degree data to account for methodological changes resulting from the COVID-19 pandemic.

We suggest future research opportunities, including the incorporation of additional socioeconomic variables, and more advanced statistical analyses to better understand causality in these relationships. For example, expanding the dataset to include additional socioeconomic variables could provide a more comprehensive understanding of how factors like income, race, or geographical location interact with education, social status, and especially prestige. This could offer insights into the intersectionality of these factors. Another idea is a longitudinal analysis. The GSS provides data over a time. Conducting an analysis over a period time would provide the ability to to study trends and track changes in social and attitudinal data; for the context of this project, educational trends, social status, and prestige scores. This could reveal evolving patterns and societal shifts.

In conclusion, this project sheds light on the relationships between education, prestige, and perceived social status. Specifically, how self perceived status and level of degree obtained related to the prestige of an occupation. Despite its limitations, it serves as a starting point for further exploration in understanding their relationship.