Statistics and Trends

University of Hertfordshire

Applied Data Science - 1

Average time spent on social media by demographics

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Github repository link :
https://github.com/SaiKrishna200120/ADS_1-assignment_02.git

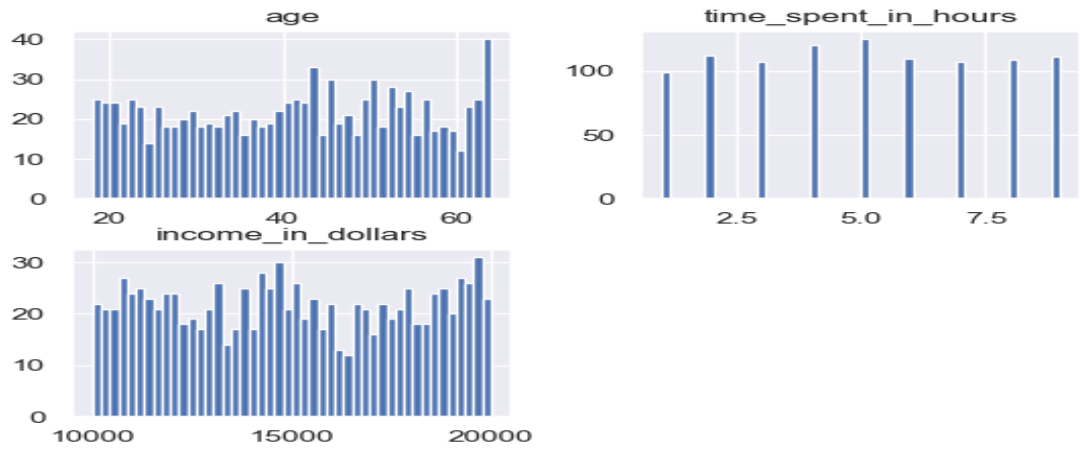
Dataset link :
https://www.kaggle.com/datasets/imyjoshua/average-time-spent-by-a-user-on-social-media/code

Abstract

In this report, we're diving into a dataset, about how much time people spend on social media based on different things like age, gender, and location. We will be looking at the average time folks from different groups hang out on platforms like Facebook, Instagram, and Youtube. Through this analysis, our objective is to gain insights into the patterns and trends of social media usage across different demographic groups.By asking meaningful questions, we can gain valuable insights into people's behavior
This dataset contains information about one thousand people, including their age, gender, amount spent on social media, preferred platform, personal interests, country, demographic details, profession, income, homeownership status, and car ownership.

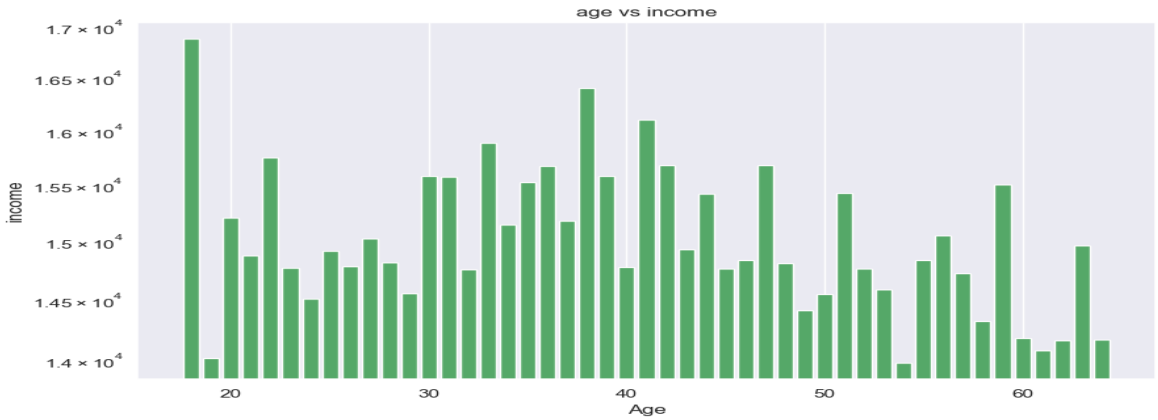
Graphs:

Histogram plot:



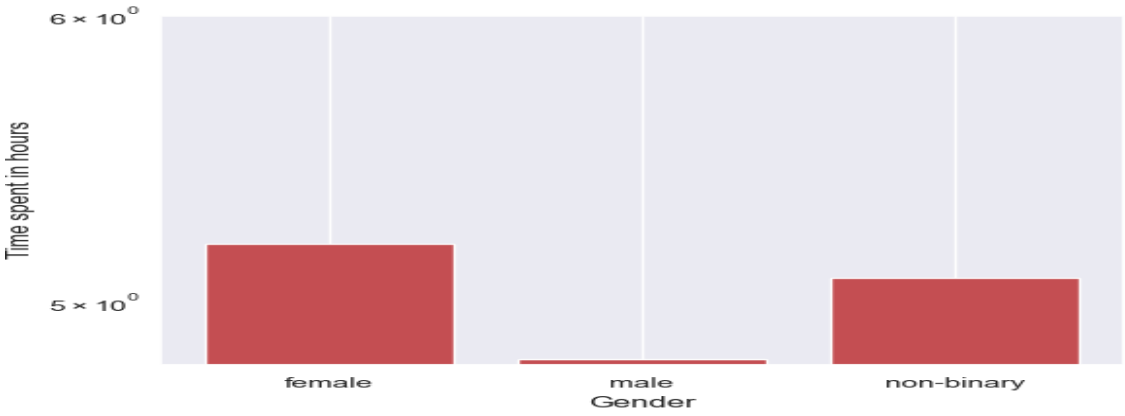
This is a frequency distribution curve of age, time spent on social media, and income from my dataset. The above graphs indicate that there are more data points from individuals aged 40 or older. The average time spent is 5 hours across all age groups, and income peaks around $10,000, $15,000, and $20,000, respectively, irrespective of age and time spent. These three histograms are independent of each other. I created these histograms using the entire dataset to gain insights into our data.

Bar plot_1:



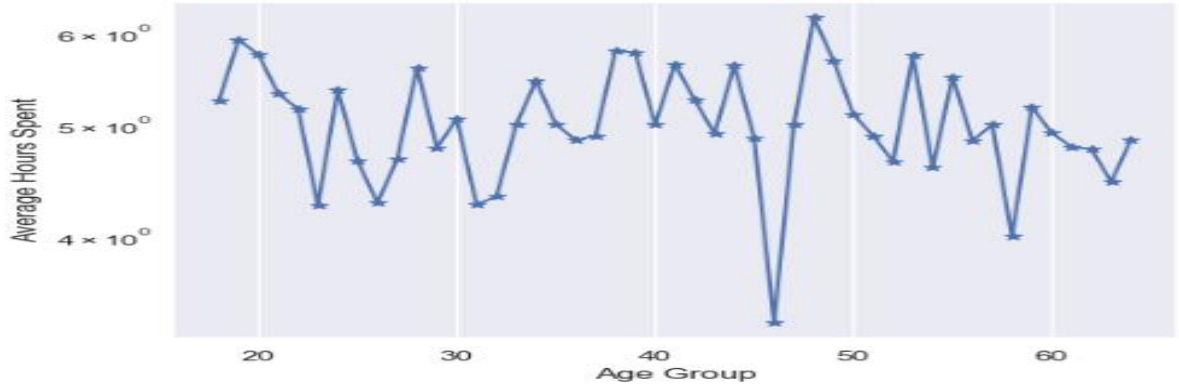
This is a bar plot comparing age groups to the average income they earn. The graph shows that, on average, 18-year-olds earn more than individuals in all other age groups across all professions. This suggests that the job market favors young, talented individuals who can keep up with evolving job trends, and that young people are more likely to be involved in the gig economy compared to older generations. The y-axis is on a logarithmic scale.

Bar_plot_2:



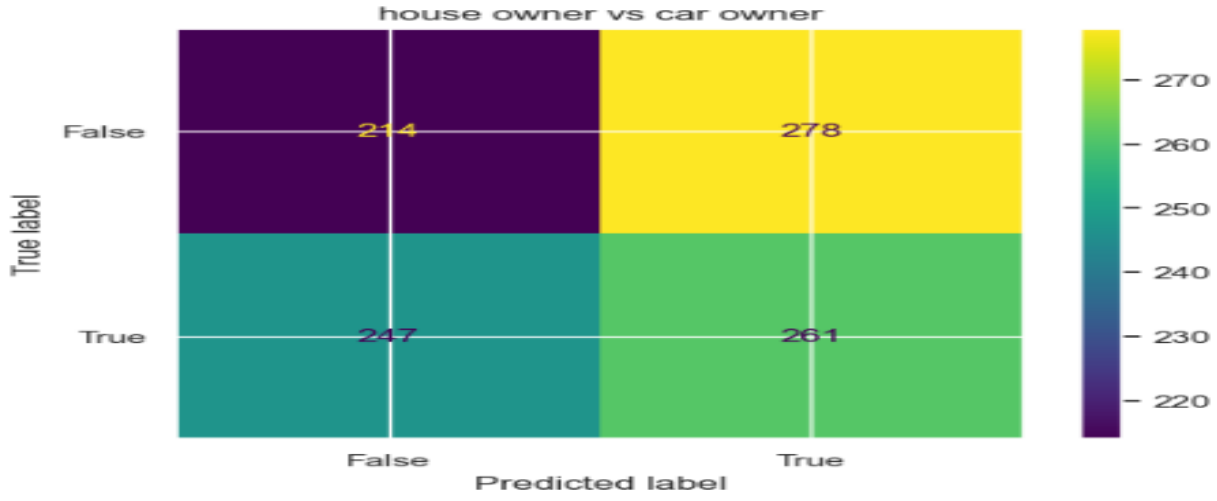
This is a bar plot comparing gender to the time spent on social media. The graph clearly shows that males spend the least amount of time on social media, while females spend the most time. Non-binary individuals spend slightly less time on social media compared to females. The y-axis is on a logarithmic scale.

Scatter plot:



This scatter graph represents age groups versus average hours spent on social media. There is a slightly negative correlation between age and hours spent in social media, with a correlation coefficient of approximately -0.033827. This suggests that as age increases, the amount of time spent on social media tends to decrease. The y-axis is on a logarithmic scale.

Confusion matrix:



This is a confusion matrix analysis to determine if a person is likely to own a car if they own a house. The confusion matrix shows that there are around 247 people who own a house but don't own a car, while approximately 261 people own both a house and a car. Additionally, around 214 people neither own a house nor a car, and 278 people own a car but don't own a house.

Summary:

The report delves into a comprehensive dataset analyzing social media usage patterns across various demographic groups, including age, gender, and location. With a focus on understanding trends in time spent on platforms like Facebook, Instagram, and Youtube, the report aims to extract meaningful insights through exploratory data analysis.

The dataset comprises information from one thousand individuals, encompassing diverse attributes such as age, gender, social media usage, preferred platforms, personal interests, country, profession, income, homeownership status, and car ownership.

Key findings from the analysis include:

1. Frequency Distribution Curves: The report presents histograms depicting age, time spent on social media, and income. Notably, there's a prevalence of data points from individuals aged 40 and above, with an average social media usage of 5 hours across all age groups. Income peaks at certain thresholds ($10,000, $15,000, and $20,000) irrespective of age and time spent, indicating independent distributions.

2. Age Groups and Income: A bar plot illustrates the correlation between age groups and average income. Surprisingly, 18-year-olds earn more on average compared to other age groups across all professions, suggesting a favorable job market for young, adept individuals, possibly involved in the gig economy.

3. Gender Disparities in Social Media Usage: A bar plot highlights differences in social media usage between genders, revealing that males spend the least time while females spend the most. Non-binary individuals exhibit slightly lower usage than females.

4. Age and Social Media Usage: A scatter graph illustrates a slight negative correlation between age and hours spent on social media, indicating a tendency for decreased usage as age increases.

5. Confusion Matrix Analysis: An analysis of homeownership status and car ownership presents a confusion matrix, indicating the likelihood of owning a car given homeownership status. The matrix reveals varying proportions of individuals owning or not owning houses and cars.

Overall, the report offers valuable insights into social media behavior across demographics, shedding light on usage patterns, income differentials, and homeownership trends.