

Marketing Analytics: Analyze Survey Data

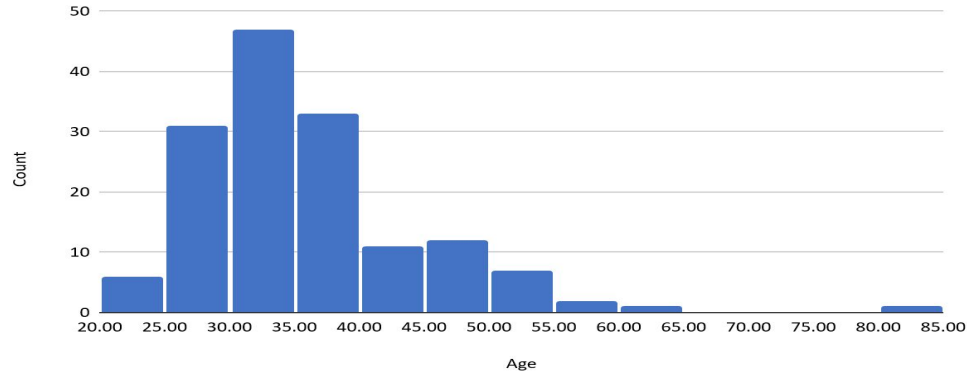
Questions:

- 1) How does the age curve for Machine learning students VS. Data Analyst students look like?
- 2) What is the highest level of education among students?
- 3) On average, how many books per year do students from different countries read and how does the student sample compare to average Americans?
- 4) How many hours each week do students spent studying and how does the whole student sample look like?

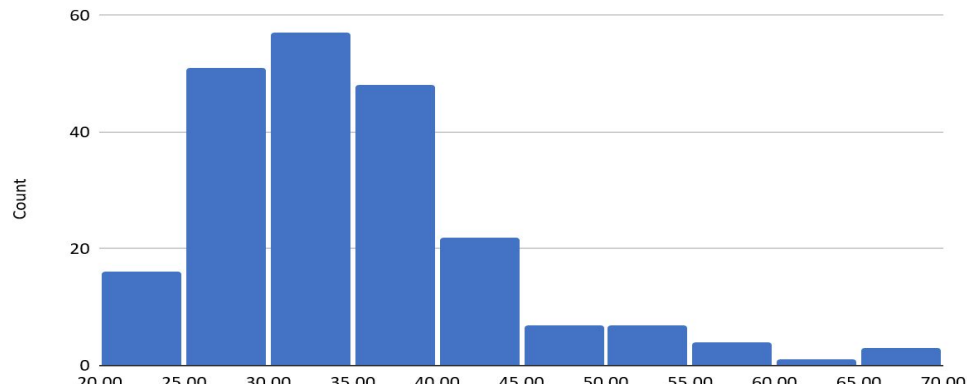
This project includes a workbook.

How does the age curve for Machine learning students VS. Data Analyst students look like?

Age curve for Data Analyst students



Age curve for Machine learning students



The age distribution for these two histogram charts looks quite alike. A difference seems to be that the age curve for analysts is more concentrated between age 30-36 yrs. and the curve for machine learning is concentrated between 25-41 yrs.

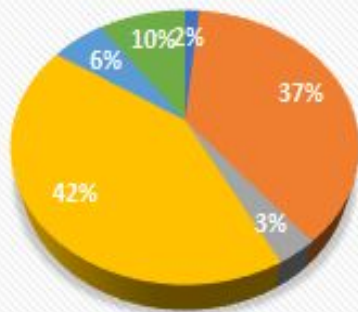
Data Analysts: There are 157 students in the data set. Standard dev.: 8.5. Mean: 35 Median: 33, mode: 33, range: 23-80 yrs. The age curve looks normal except for one outlier.

Machine Learning Engineers (ML): There are 235 students in the data set. Standard dev.: 8.6. Mean: 34.6 Median: 33, Mode: 32, range: 21-68 yrs. The age curve is difficult to label, it is normal and /or right skewed.

Another difference is the range. The data analyst set had one person at 80 yrs. which was higher than ML. Mean and median, spread and mode are similar. We can see that in both datasets the middle value was 33 yrs. (acc. to the median). The average age was ca 35 yrs. The most common age for students was 32-33 yrs (the mode) in both sets of

What is the highest level of education among students?

Highest level of education

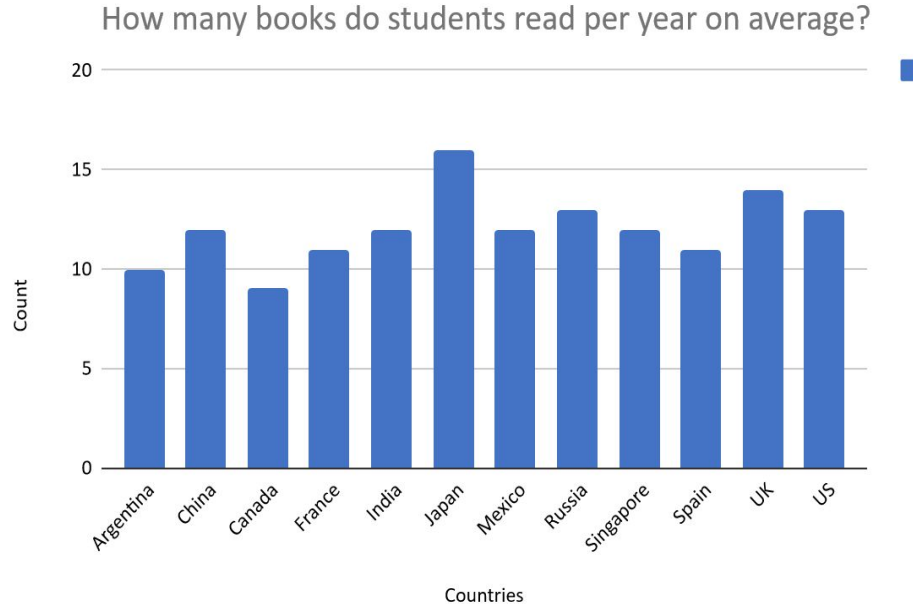


■ Associates ■ Bachelors ■ High school or below
■ Masters ■ Nanodegree Program ■ PhD

This chart shows the relative distribution of highest level of education for Udacity students in the data.

Absolute numbers: associates: 12, bachelors: 283, high school or below: 24, masters: 316, nanodegree Program: 45, PhD: 73.

On average, how many books per year do students from different countries read and how does the student sample compare to average Americans?



No countries show any substantial differences. Outliers: I capped at 150 (it takes time to read a book).

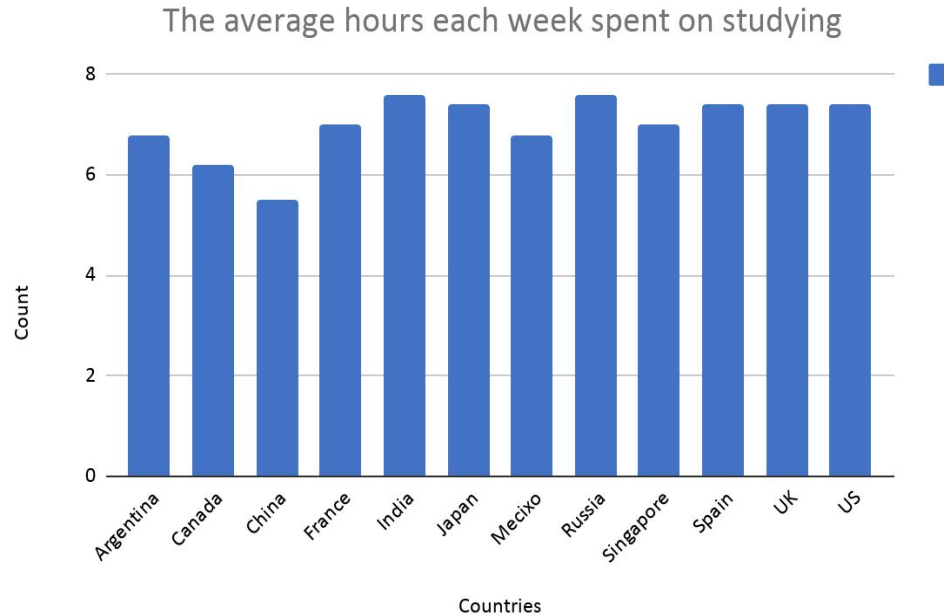
Numbers below are according to the whole data sample over how many books Udacity students read/year and PEW Research Center.

Americans read about **12** books a year. The median is 4 books/year, American college grads read 17 books per year on average: [source](#).

According to this analysis, on average, Udacity students read **12** books/year and the median is 8 (excluding outliers). The **mode** for Udacity data is 10: it is the value that occurs most often. The **std. deviation** (SD) is 14,8, this is above the mean, the spread is significant. The **range** of the data is 0-120.

A possible finding is that Udacity students read about the same (on average) number of books per year as an average American and that the median is more alike the mean for Udacity students. This indicates that the dataset for Udacity students is less skewed. However, if PEW treated outliers different, the value of the comparison diminishes significantly.

How many hours each week do students spent studying and how does the whole student sample look like?



Here is a bar chart showing a comparison over the average time students from different countries studied each week.

There is no significant difference in study hrs/week between students from different countries.

Below numbers are from the whole student sample (all students, not divided in countries) over time spent studying each week: **Std. deviation (SD): 6.6, Mean: 7.0, Median: 6, mode: 6, range: 0-80**. Data is skewed to the right since the mean is higher than the median. SD shows the spread in the data, higher number: more spread: [source](#). Here, SD shows a moderate spread in the data. The range shows that the data sample spent 0-80 hours/week studying. The mode of the data shows that 6 hours/week studying was most common among the students.