greatlearning
Power Ahead

Cardio Good Fitness Case Study

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Objective

- To extract actionable insights from the data that we have collected from the 180 customers who purchased one of three different treadmills to optimize resources and identify area of growth and improvement.

    1. Come up with a customer profile or the characteristics of a customer of the different projects.

    2. Perform Uni-variate and multi-variate analysis.

    3. Generate a set of insights and recommendations that will help the company in targeting new customers.

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Data Overview

- This data is specific to the customers who purchased one of three treadmills available in your store.

Variable	Description
1. Product	The model no. of the treadmill
2. Age	In no of years, of the customer
3. Gender	Of the customer
4. Education	In no. of years, of the customer
5. Marital Status	Of the customer
6. Usage	Avg. # times the customer wants to use the treadmill every week
7. Fitness	Self rated fitness score of the customer (5 - very fit, 1 - very unfit)
8. Income	Of the customer
9. Miles	Expected to run

Observations	Variables
180	10

Note:

- There were not any missing values in this dataset.
- The Income_Index was created to be able to view the income as a range.

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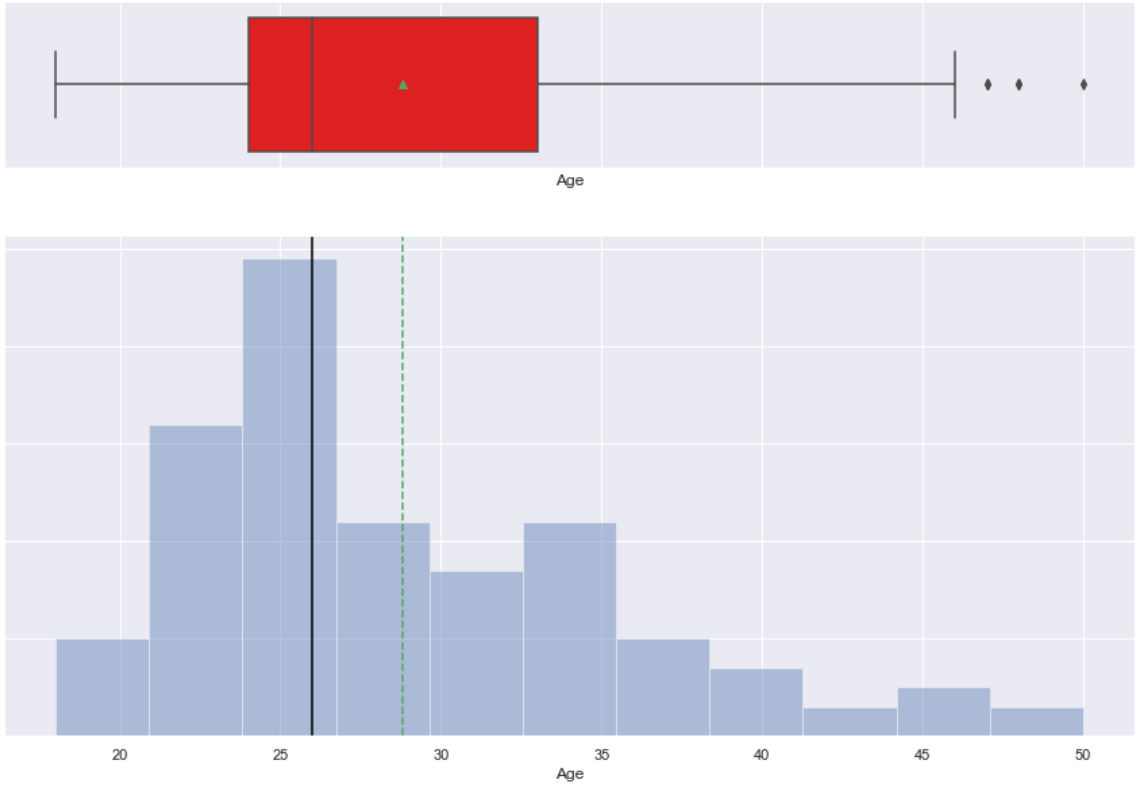
Exploratory Data Analysis – Observation of Age

Observations:

- The distribution of Age is slightly right skewed.
- The majority of purchases were made by people in their 20s.
- Median age is 26 while the mean age is 29.
- There are only a few upper end outliers.
- The highest age is 50 and the lowest is 18.



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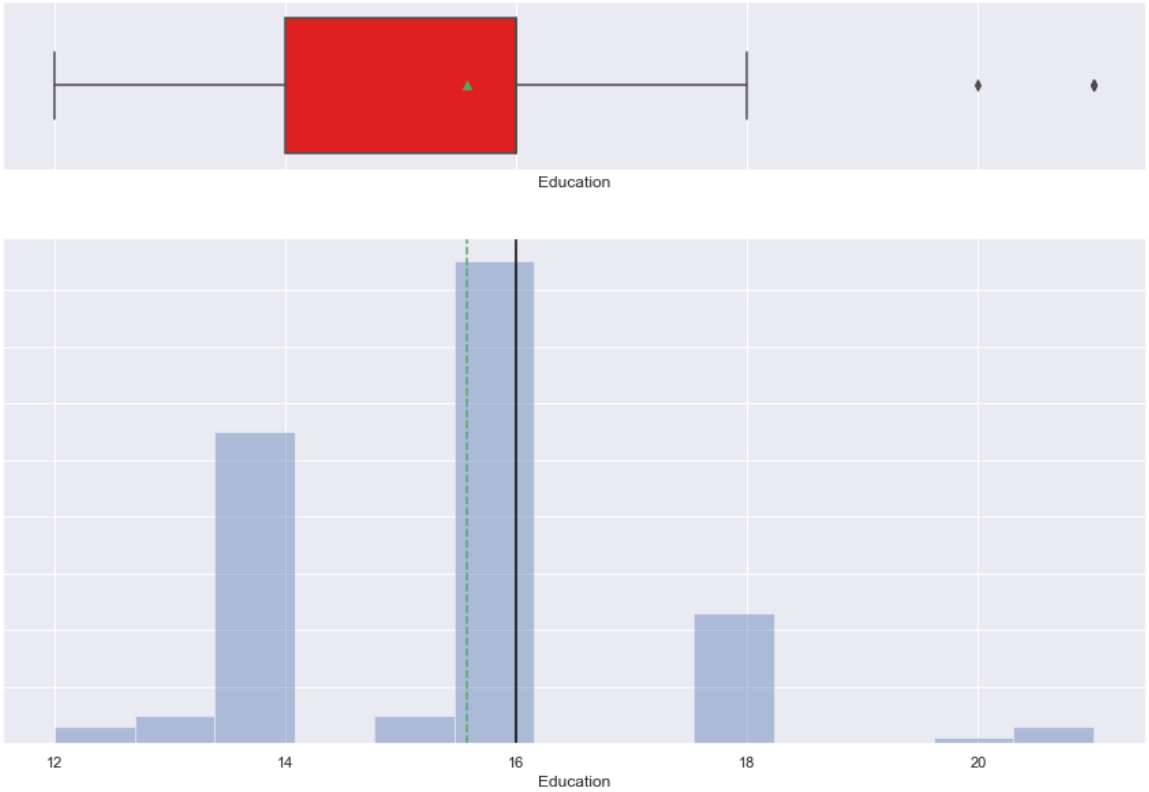
Exploratory Data Analysis – Observation of Education

Observations:

- The variable Education is very close to a normal distribution even though there are some years that are not represented.
- The majority of purchases were made by people who have obtained at least 15.5 years of education.
- Median years of education is 16 while the mean year of education is 15.5.
- There are only a few upper end outliers.
- The highest year of education is 21 and the lowest is 12.



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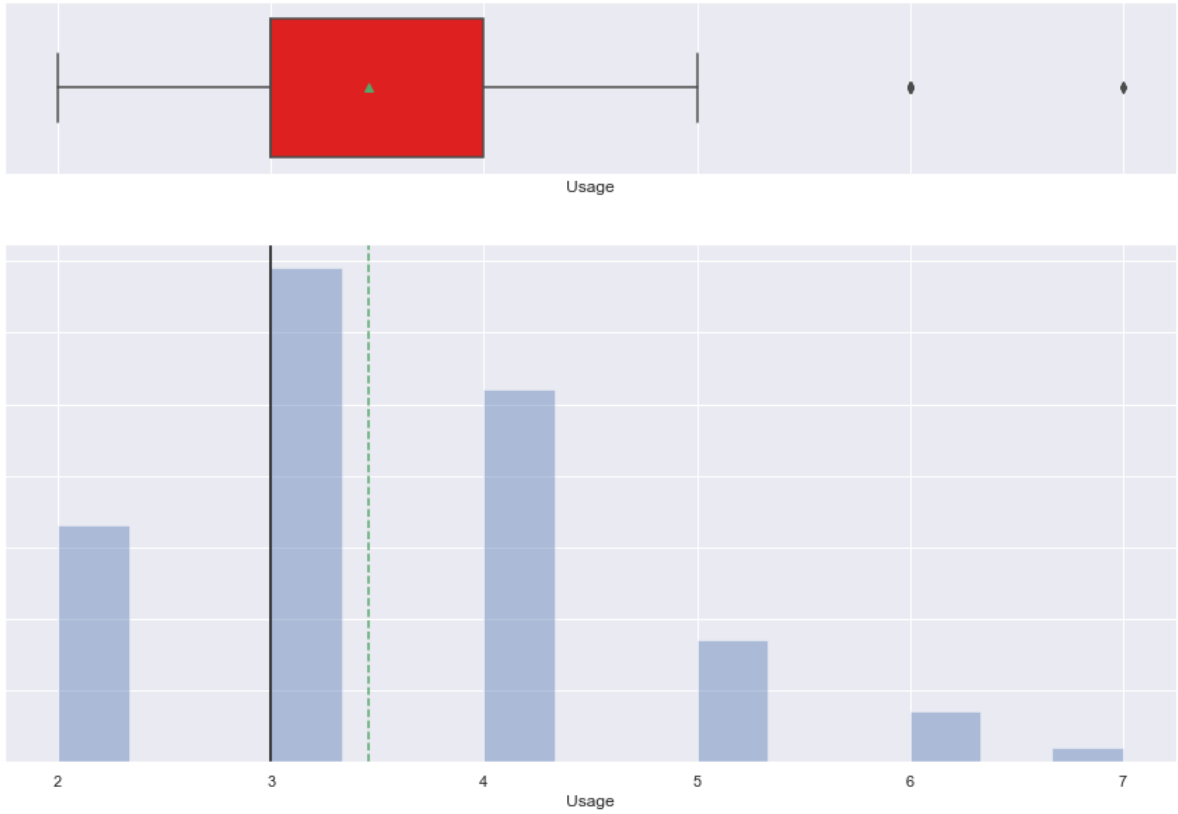
Exploratory Data Analysis – Observation of Usage

Observations:

- The distribution of Usage could be considered normally distributed when looking at how close the mean and median are. However when you look at this histogram it appears to be slightly skewed to the right.
- The majority of times customers plan to use the equipment is 3 times per week.
- Median for the planned amount of times to use per week is 3 while the mean is 3.45.
- There are only a few upper end outliers.
- The highest planned usage per week is 7 and the lowest is 2.



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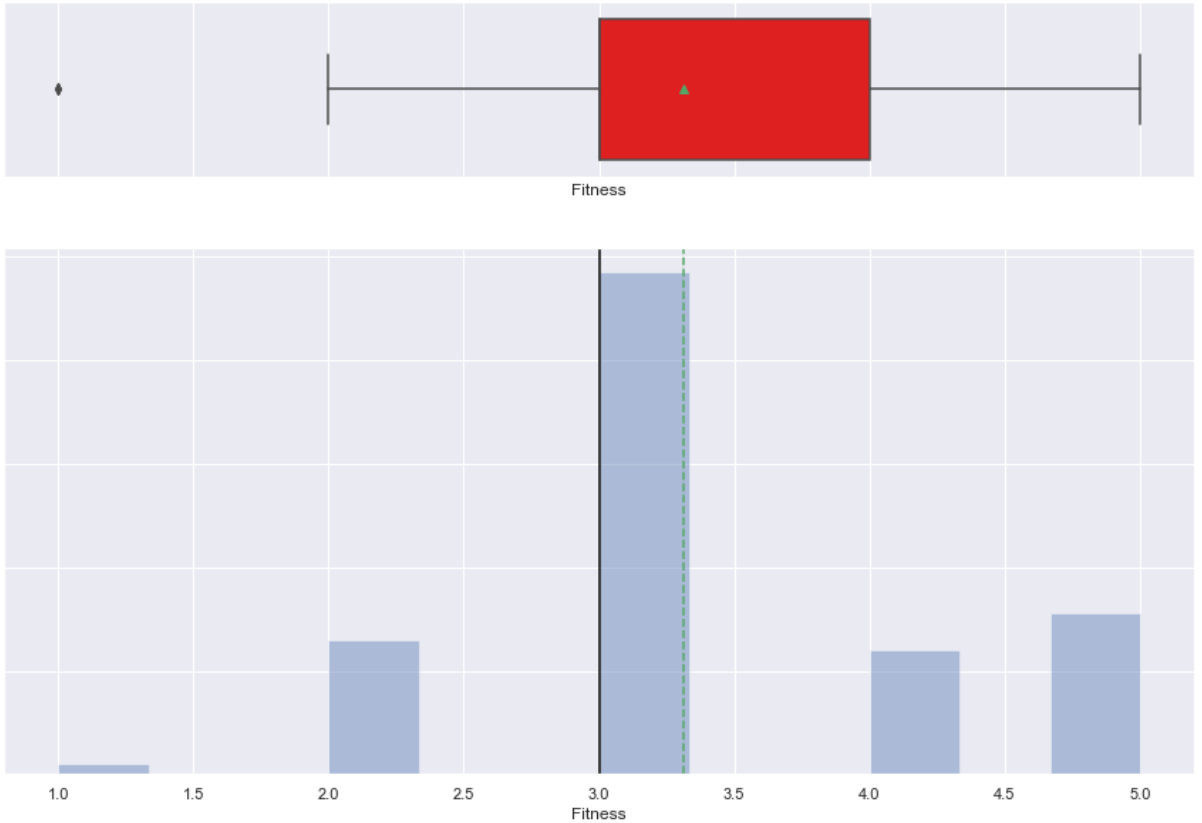
Exploratory Data Analysis – Observation of Fitness

Observations:

- The variable Fitness is very close to a normal distribution even though there are some fitness levels that are not represented.
- The majority of customers rate their fitness level at a 3 out of 5 with 5 being the highest.
- Median for rated fitness level is a 3 while the mean is 3.31.
- There is only one lower end outlier.
- The highest planned usage per week is 5 and the lowest is 1.



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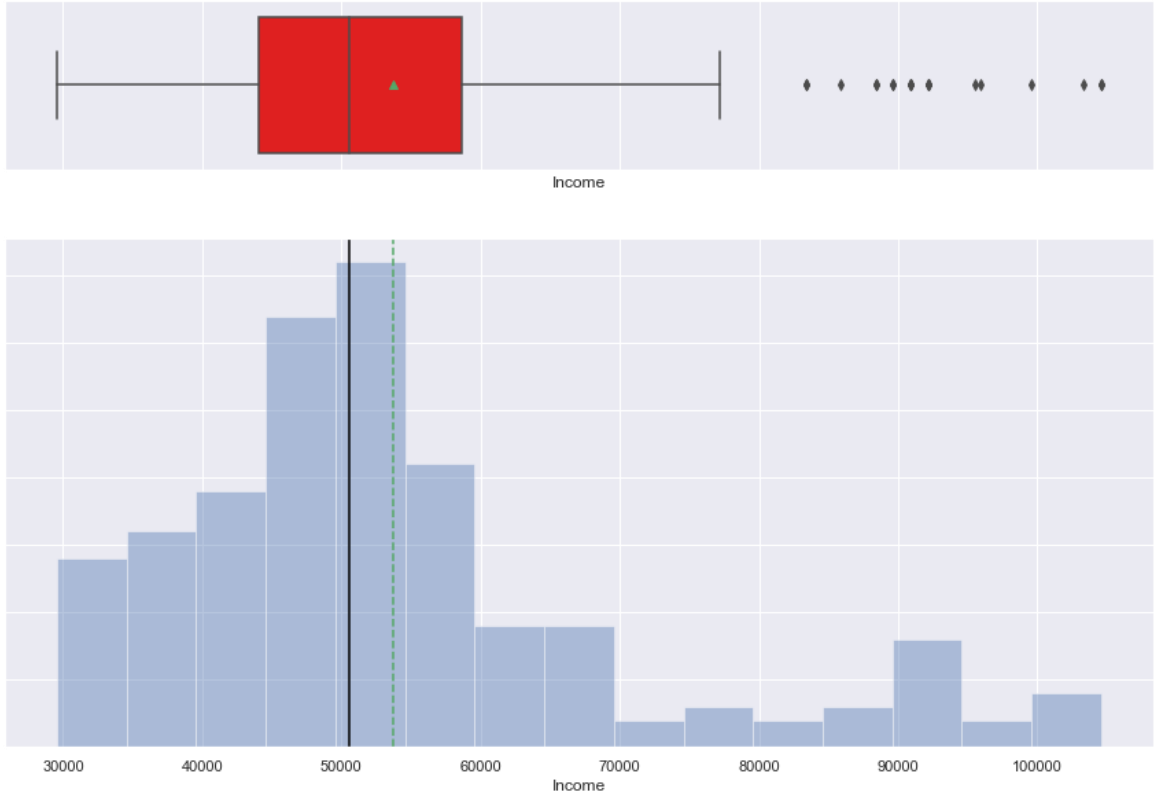
Exploratory Data Analysis – Observation of Income

Observations:

- The distribution of income is normally distributed.
- The majority of customers earn between $45,000 and $55,000.
- Median for yearly income is $50,596.50 while the mean is $53,719.57.
- There are many upper end outliers which can be seen in the histogram.
- The highest income reported is $104,581.00 and the lowest is $29,562.00.



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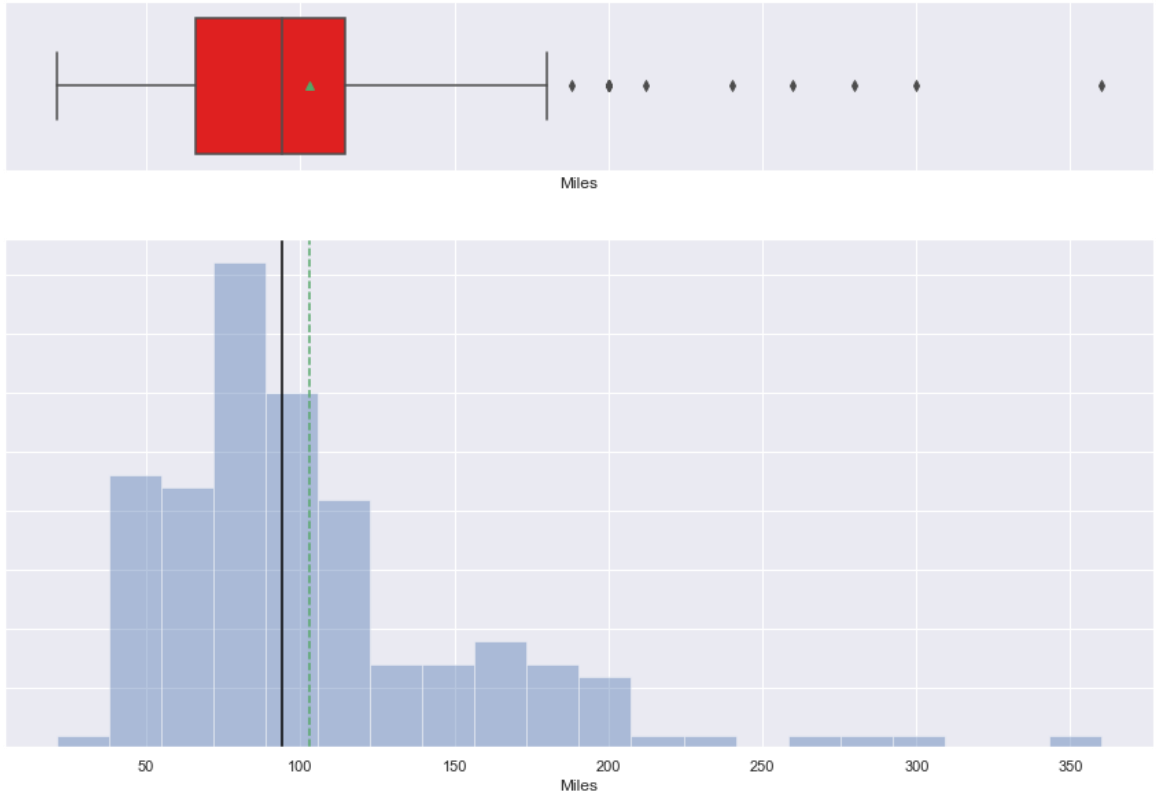
Exploratory Data Analysis – Observation of Miles

Observations:

- The distribution of Miles could be considered slightly right skewed when looking at how the difference between the mean and median.
- The majority of times customers plan to approximately 100 miles. It is unclear in the description of the data what the length of time is for this.
- Median for the planned number of miles to run is 94 miles while the mean is 103.
- There are only a few upper end outliers.
- The highest planned number of miles to run is 360 and the lowest is 21.



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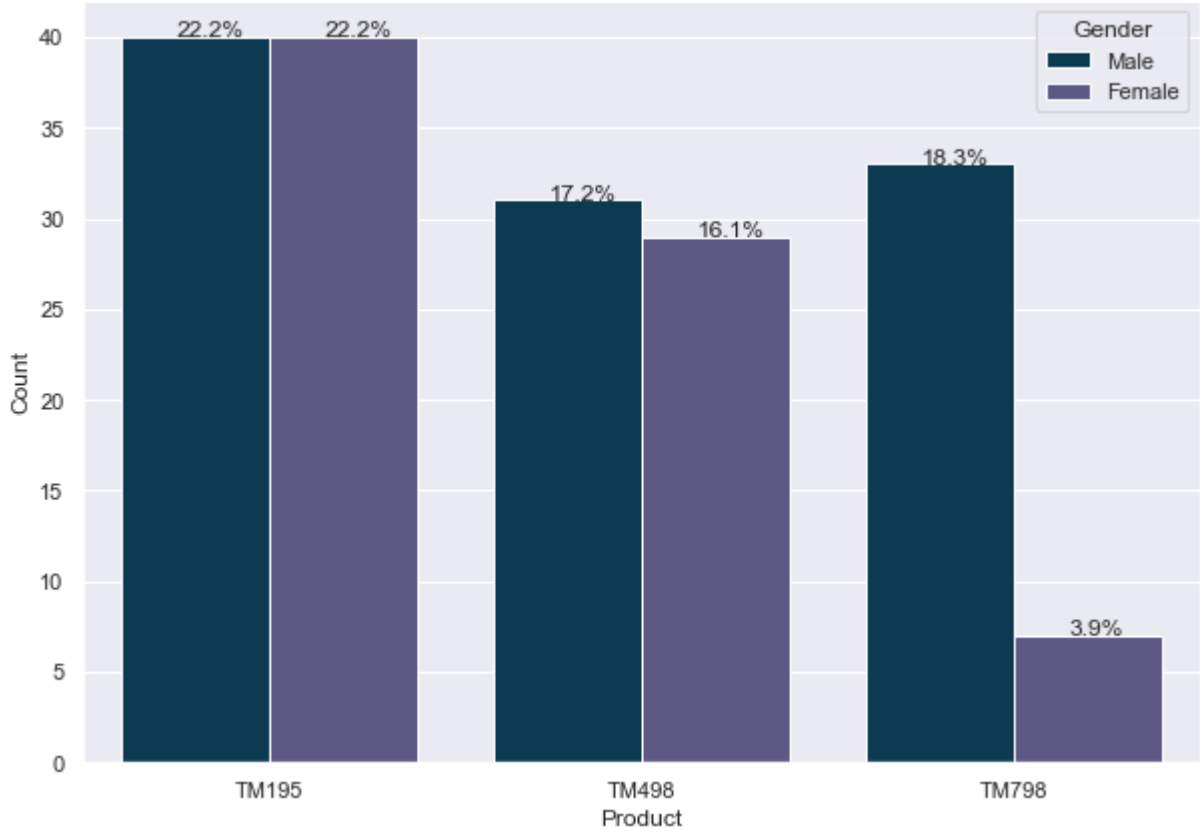
Exploratory Data Analysis – Observation of Product by Gender

Observations:

- Here we can see males drastically bought more of model TM798.
- Model TM195 was exactly the same while Males bought slightly more than females on TM498.



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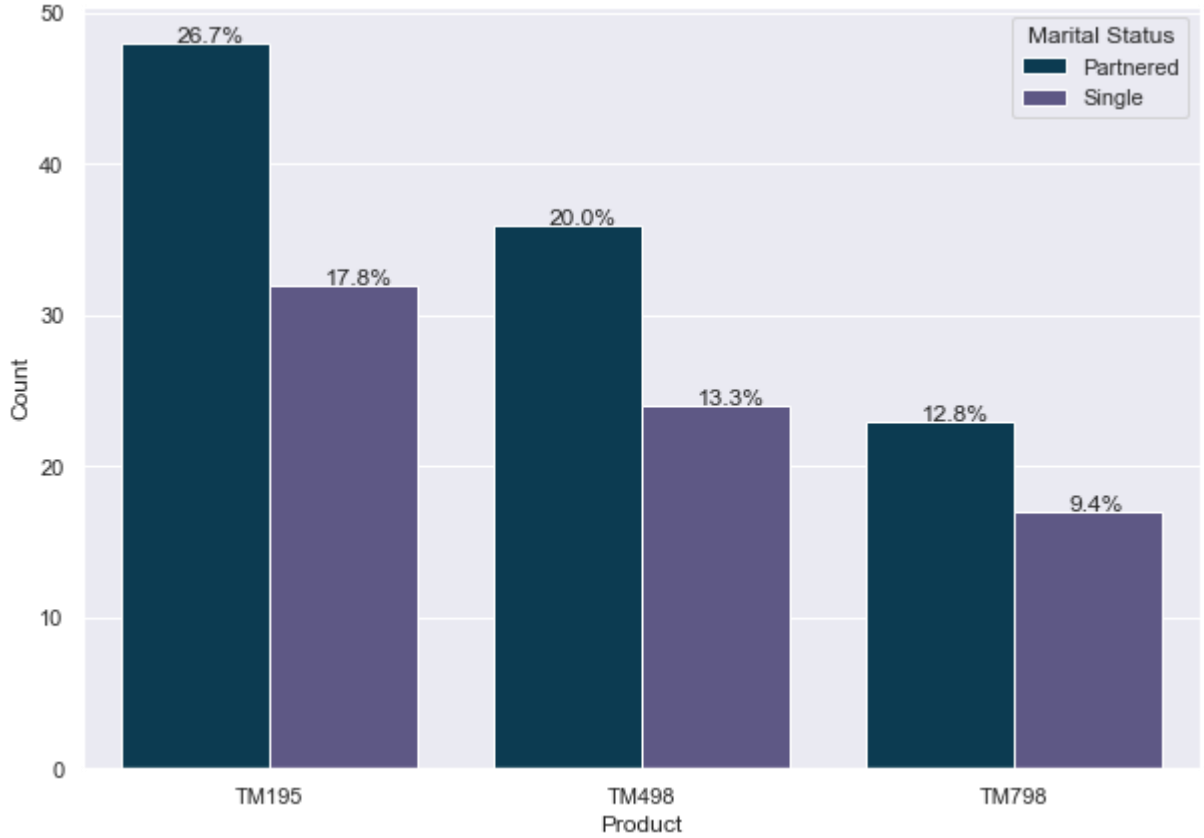
Exploratory Data Analysis – Observation of Product by Marital Status

Observations:

- Here we see that by percentage both partnered and single people bought more of TM195.
- While single people by the least of model TM798.



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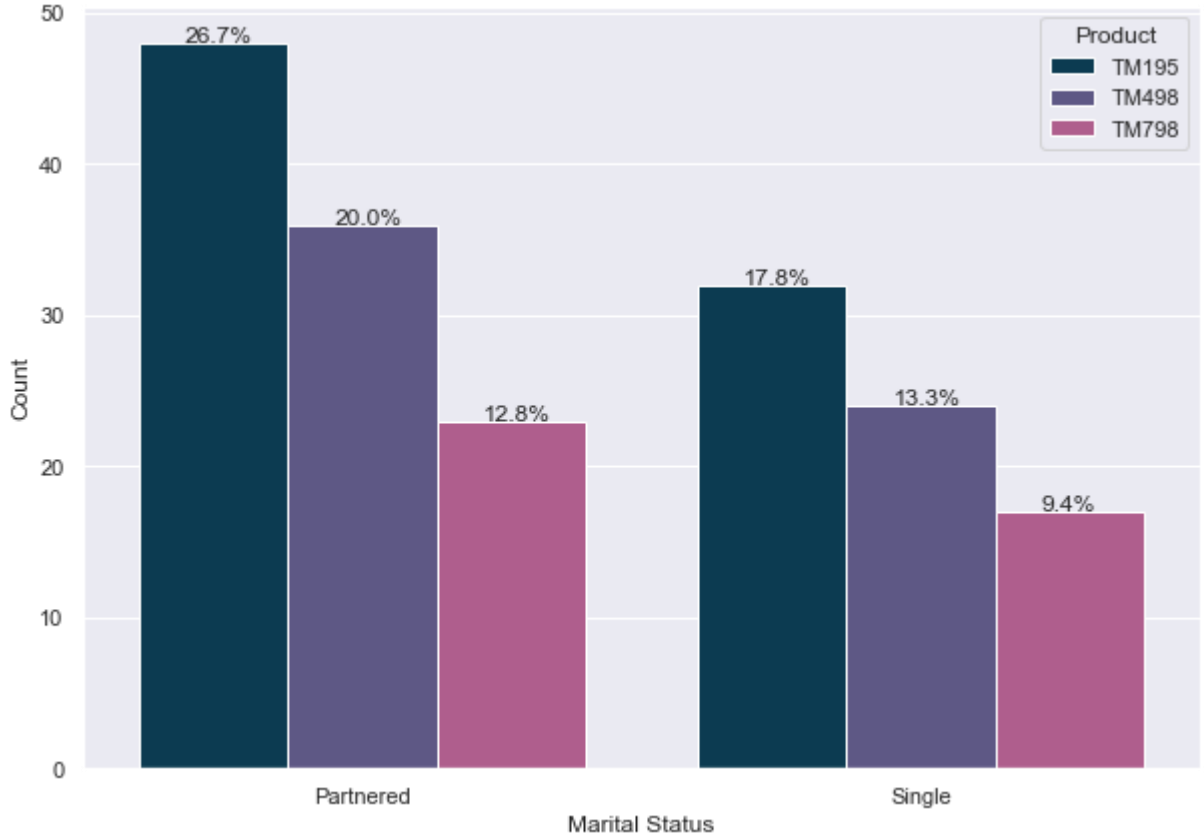
Exploratory Data Analysis – Observation of Marital Status by Product

Observations:

- Both Partnered and Single status people buy all three products
- It does appear that by these parameters, partnered people buy more of all three products.



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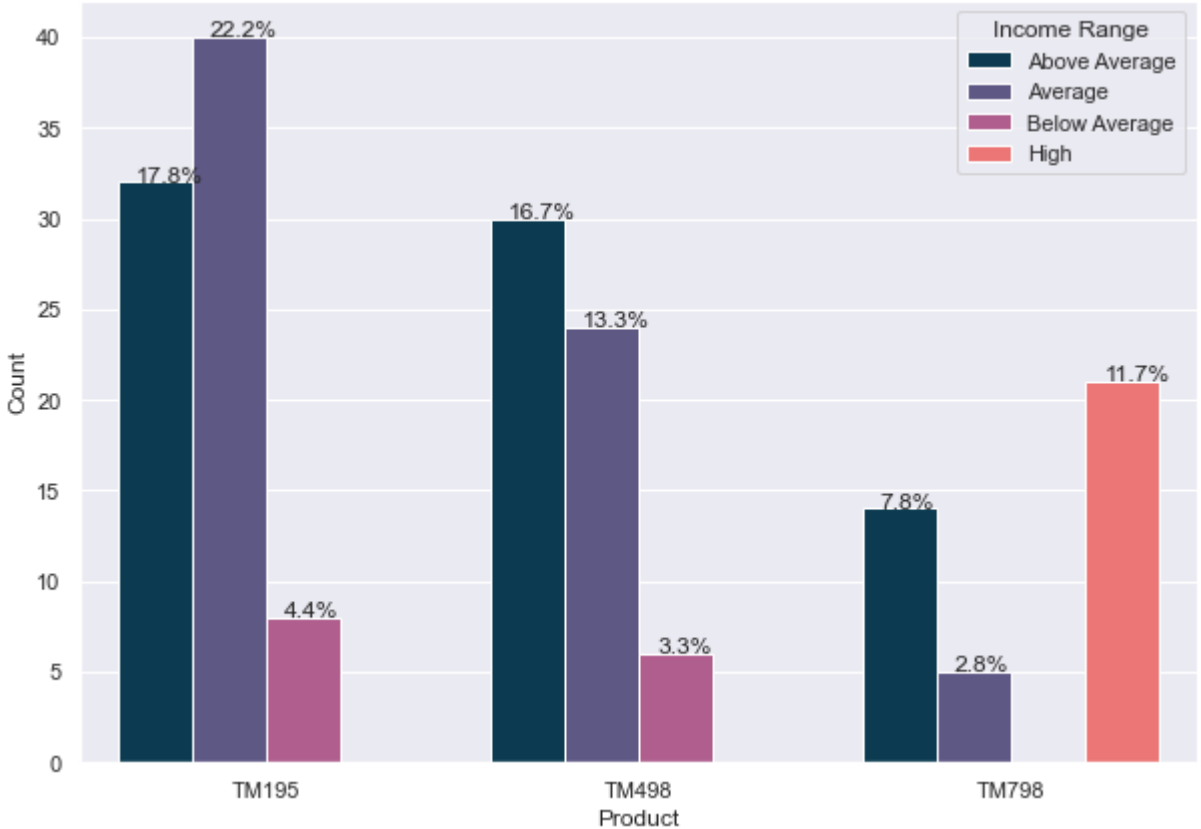
Exploratory Data Analysis – Observation of Product by Income Range

Observations:

- By dividing Product up by Income Range we can see that no one with an income level Below Average bought a TM798.
- More people making an Average or Below Average Income bought TM195.



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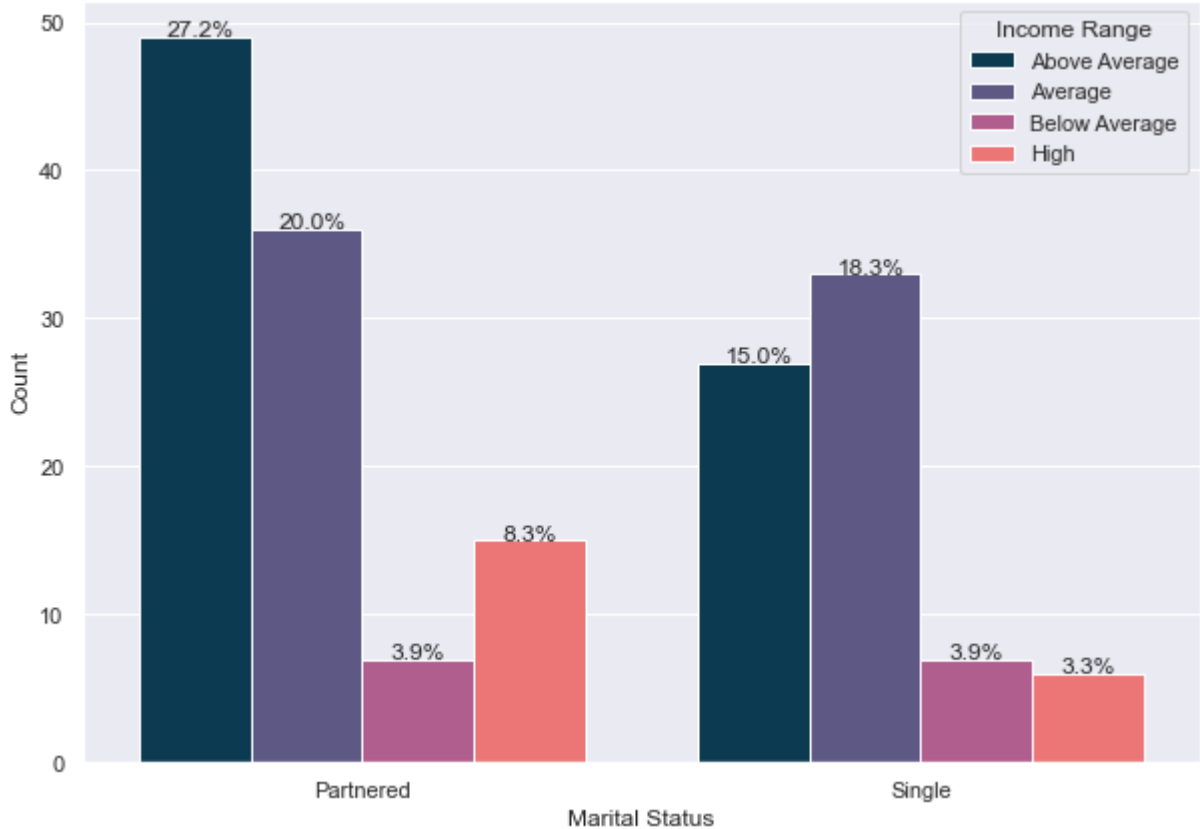
Exploratory Data Analysis – Observation of Marital Status by Income Range

Observations:

- Here we can see there are more higher income partner people in every income range except Below Average.



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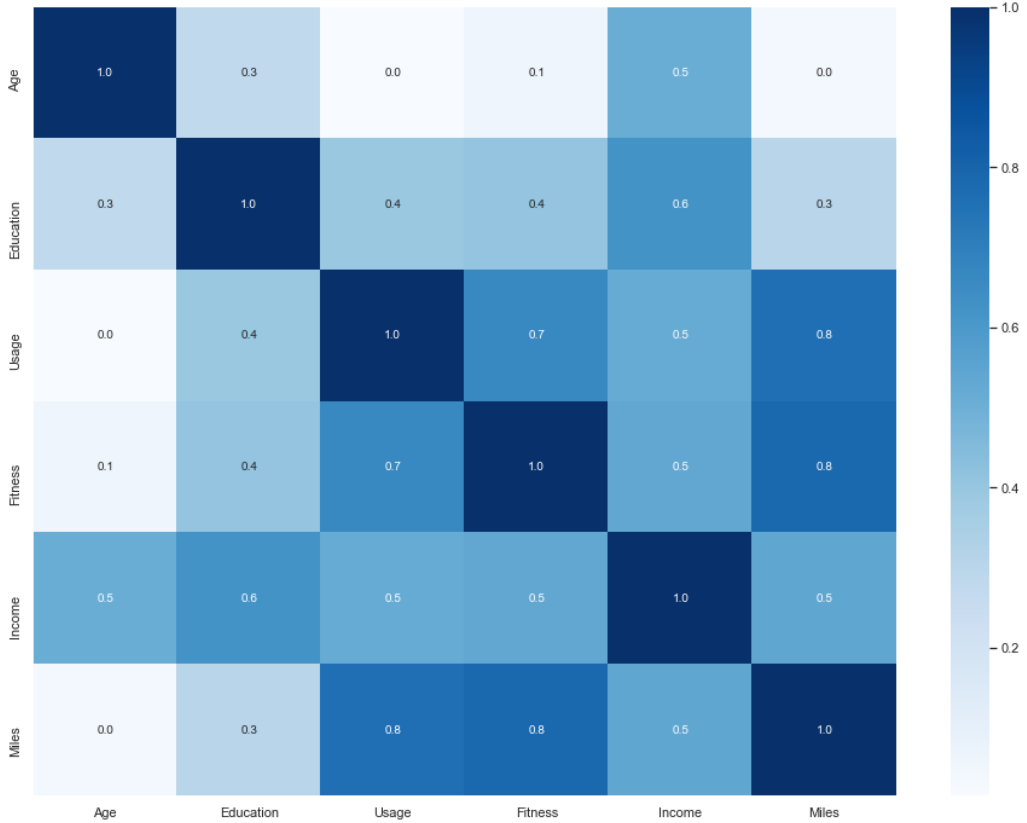
Exploratory Data Analysis – Correlation

Observations:

- Usage, Fitness, and Miles all showed a high correlation to each other.
- Education showed a somewhat high correlation with Salary at 0.6.
- It is interesting that nothing is negatively correlated with this data.
- It is important to note that correlation does not imply causation.



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Exploratory Data Analysis – Bivariate Scatter Plots

Observations:

- It is more obvious in picture form there is a bit of a correlation with Age and Income, while in the correlation plot it was only a 0.5 correlation.

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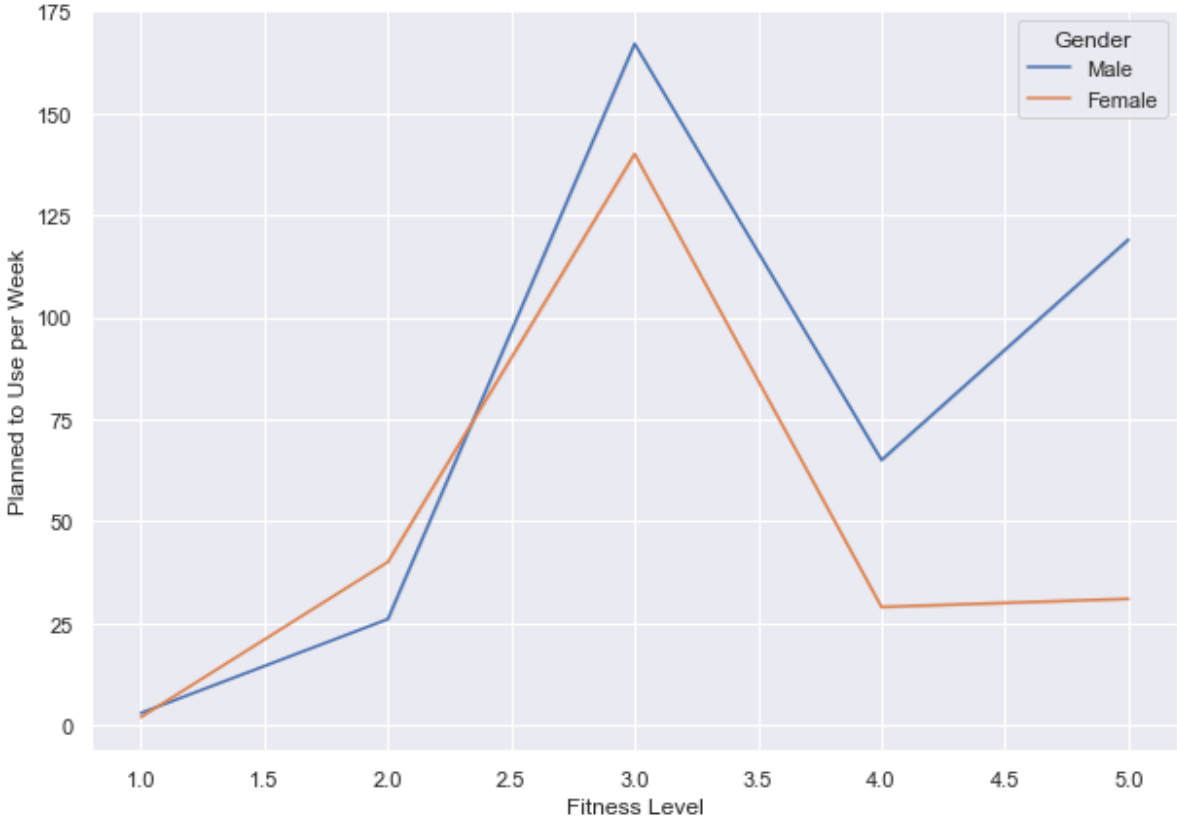
Exploratory Data Analysis –

Relationship between Fitness Level and Planned Usage variables by Gender

Observations:

- Here we can see that there is a peak a sharp peak where people self-declared a fitness level of 3 and the planned number of times they will use the product with both Females and Males.



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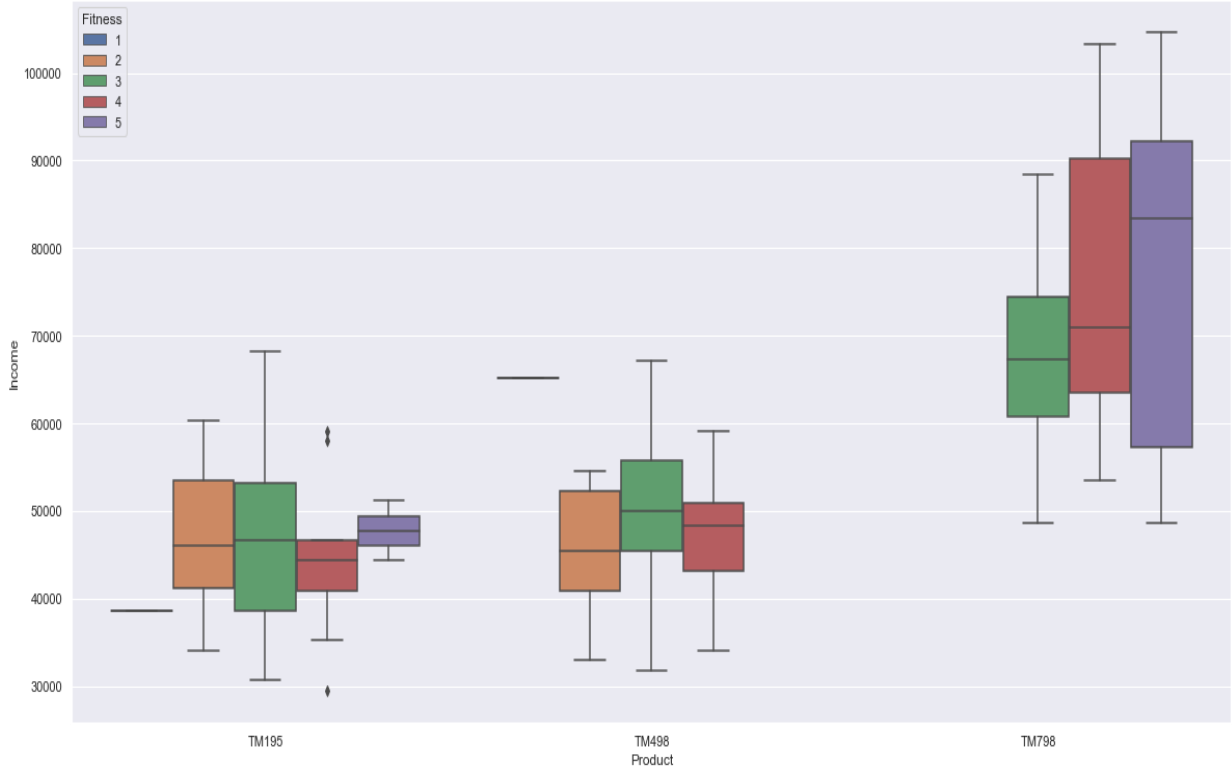
Exploratory Data Analysis –

Relationship between Products and Income variables by Fitness Level

Observations:

- Here we can see again that the higher the income the more likely the TM798 will be purchased.
- No one who self declared as a Fitness Level 5 bought TM498.



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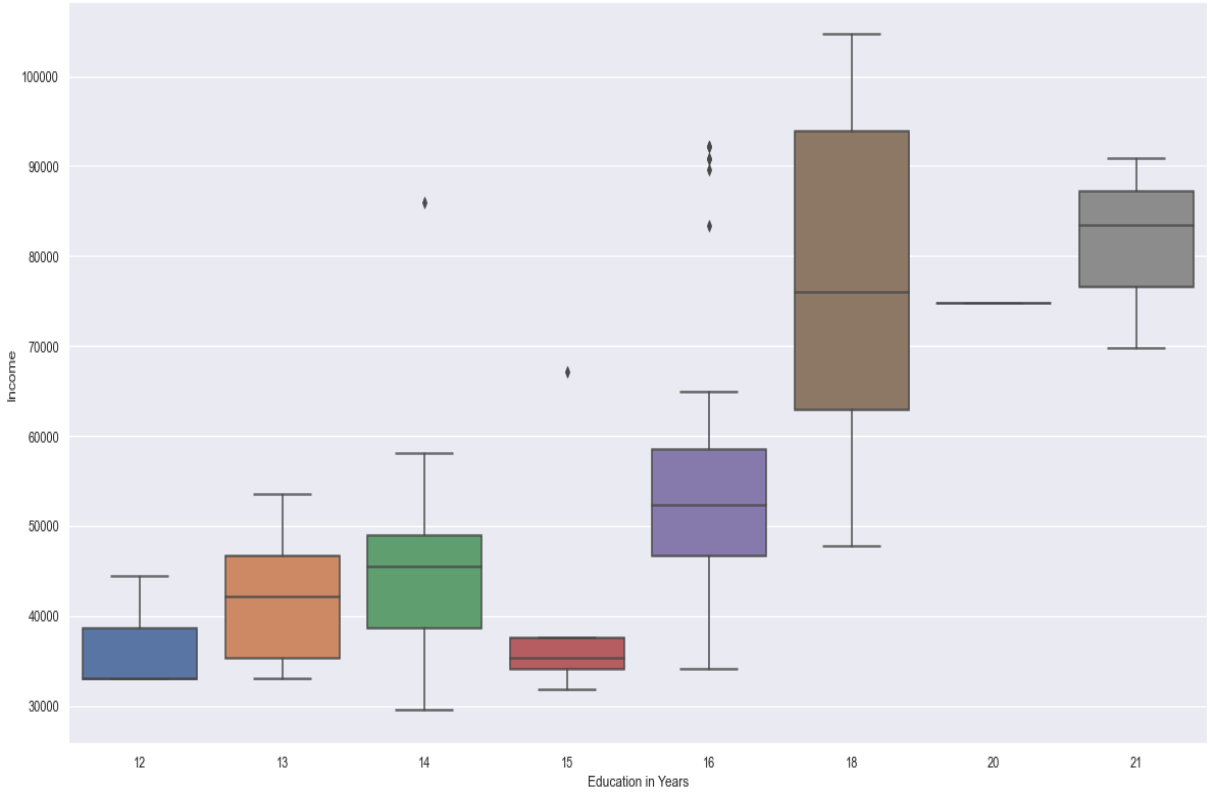
Exploratory Data Analysis –
Relationship of Education by Income

Observations:

- Here we can see that people with no education past 12 years and people with 15 years of education make a similar income.
- We can also see that people who have the most education do not have the highest income.
- 16 years of education had the most higher end outliers.



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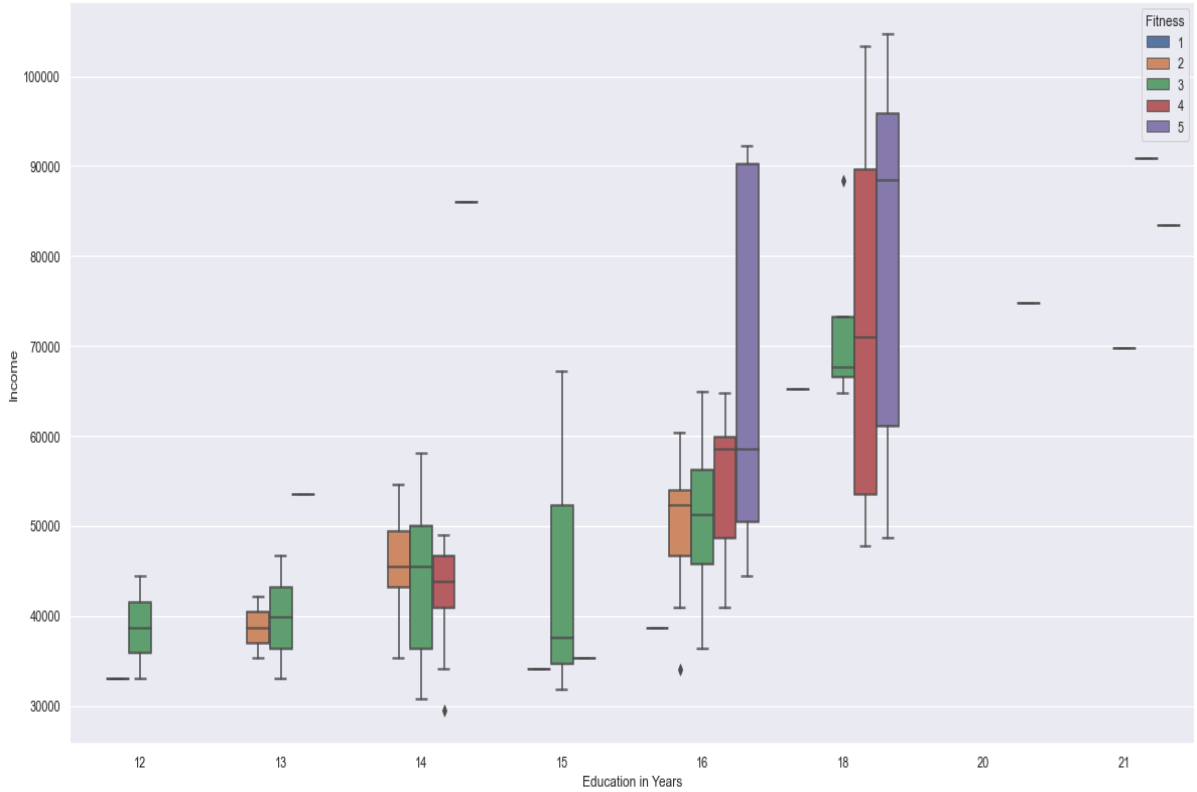
Exploratory Data Analysis –

Relationship of Education by Income by Fitness Level

Observations:

- It is interesting to see that the lower the education the lower the conceived fitness level.



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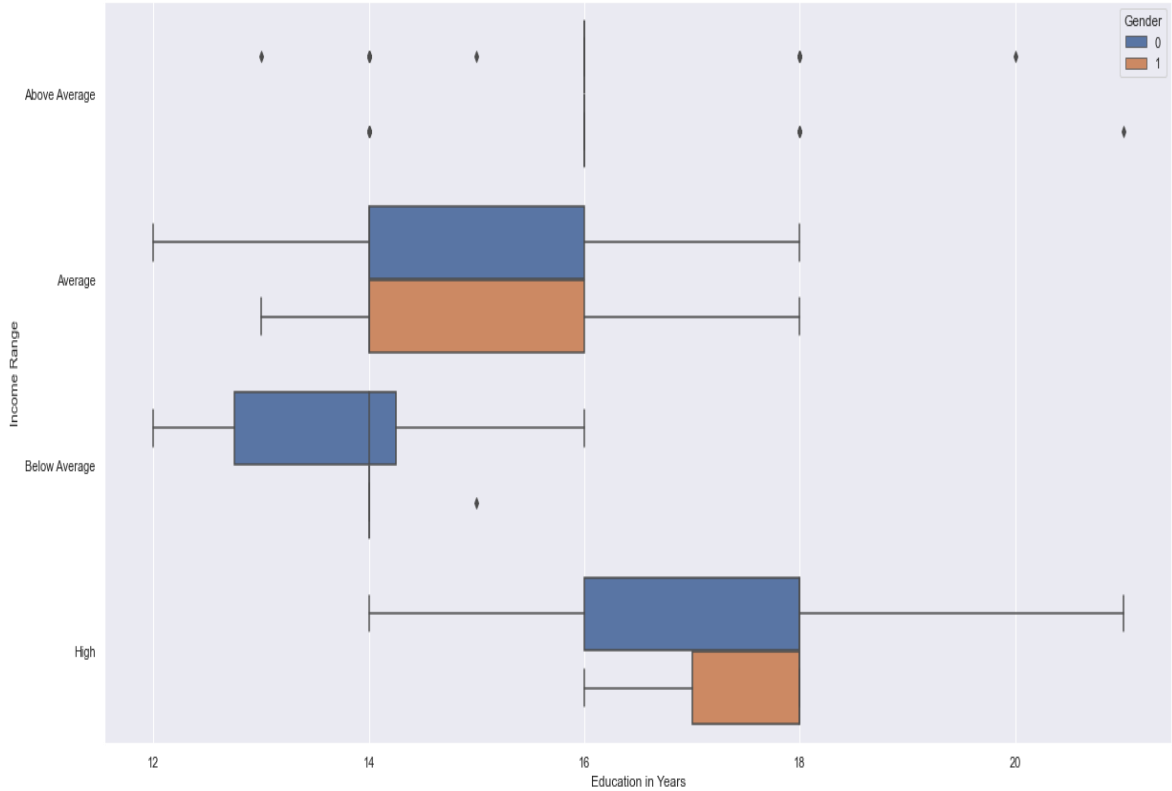
Exploratory Data Analysis –

Relationship of Education by Income by Gender

Observations:

- Here we can see that males and females occupy each Income Level.
- While the majority of females occupy either Average or High income levels.
- We can also see the correlation of Income Level and Number of Years of Education.



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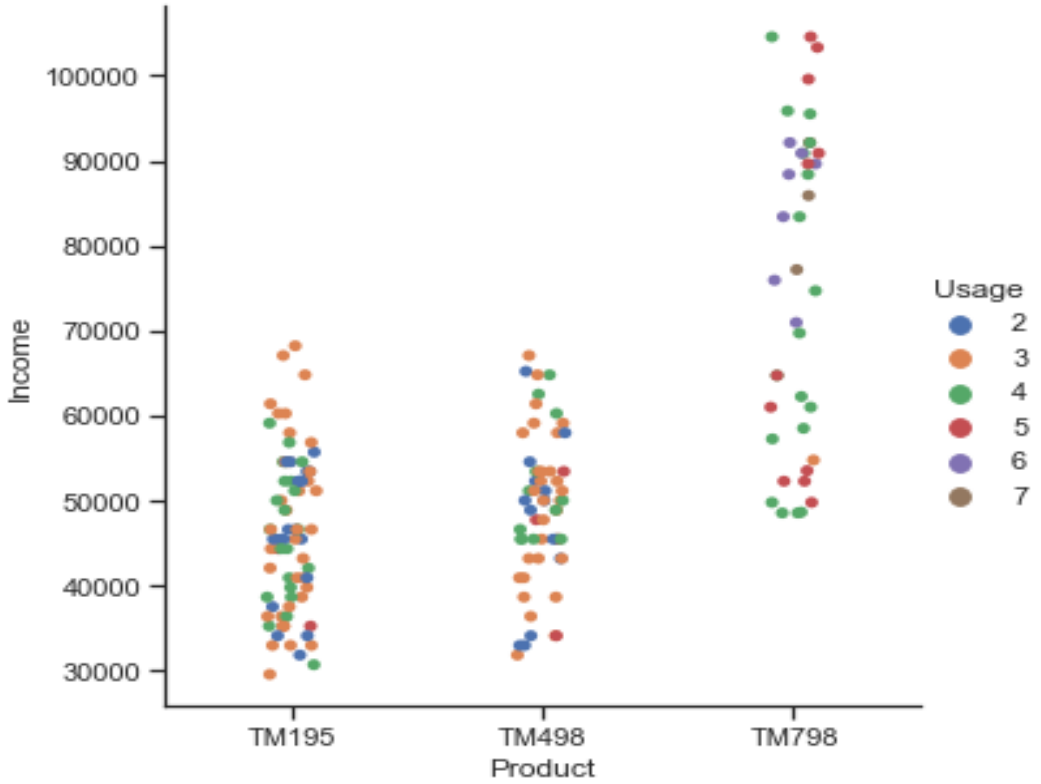
Exploratory Data Analysis –

Relationship Product and Income Variable by Usage

Observations:

- Here we can see that people who plan to use that product more with a higher income will by TM798.



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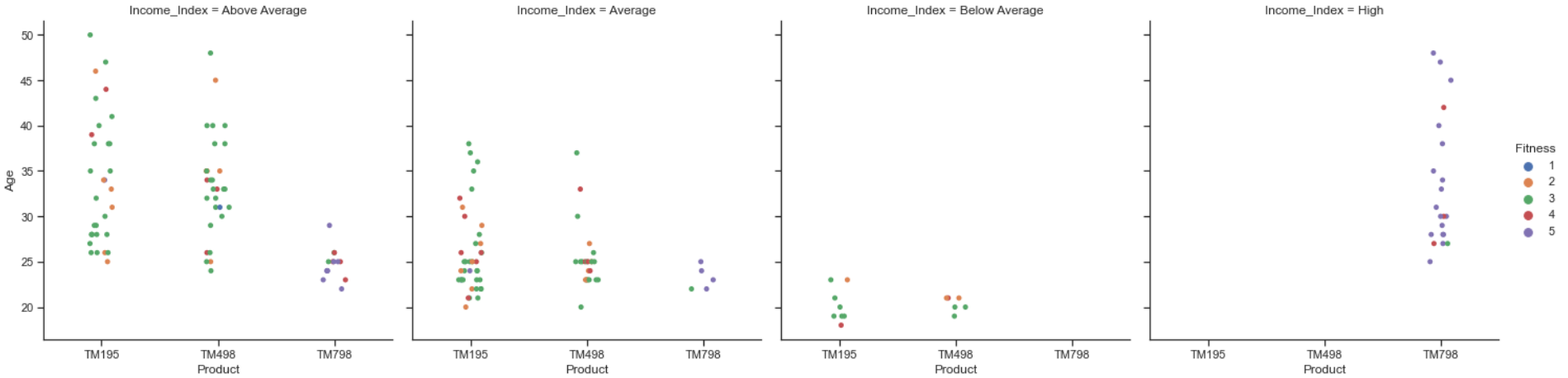
Exploratory Data Analysis –

Relationship Product and Age by Fitness Level Divided by Income Level

Observations:

- This further shows that people who rate themselves with a self-declared higher fitness level and higher income will buy the TM798.
- We also see that both the TM195 and TM498 are more likely to be bought by self-declared 4 and below in the Average and Above Average Income Ranges.
- Something we haven't seen is that the older the client the more likely they are to have at least an above average income.



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Conclusion

After the analysis, we have been able to conclude that

1. Product TM798 is the top model bought by older customers with higher incomes who have a perceived higher level of fitness.

2. Product TM195 was the most frequently bought by customers who have an average or above average income, but all fitness levels were represented with this model.

3. Product TM495 was purchased most often by younger customers that had an average perceived level of fitness. Most of the customers that purchased this model had an income of average or above average.

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Recommendation to Business

Based on the analysis, there are following recommendations that can help the business grow:

1. Customers who have a perceived higher level of fitness, usage, and expected miles to run are more likely to buy the TM 798 model. Using a quiz to find out the best model for you, have customers understand their perceived level of activity is higher as well as their fitness. This allows them to see that a better model will last their needs longer.

2. More males purchased treadmills than females. During high peak times of female related holidays, present a discount that attracts health and fitness to the women we love for models TM498 and TM 798.

3. To attract more single customers, we need to partner with dating apps that gives a discount on the TM195 and TM498 models. By reaching out to dating apps we are more likely to have an audience solely dedicated to the single population.

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