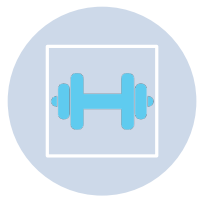# Cardio Good Fitness Case Study

By Dwight Pagan-Lugo

Background

Cardio good fitness is a retail store and one of the products it sells are Treadmill machines.

Objective

To explore and analyze the data from Cardio Good Fitness and extract insights to have a better understanding of our customers profiles and products preferences.

01

Extract insight about product preference and usage based on customers characteristics

02

Get to know what market segment our customers pertain to

03

Understand which products are more popular amongst our customers

Objective cont.

Data information

- The data contains information about customers, their education, income, marital status, age, usage of Cardio good Fitness products (Treadmills), and how many miles the run-on average as well. There are other data fields that have also being provided.

- This is great information to get to know the store's customers for these type of products and be able to see what is the market segment (dependent on all the variables mentioned above) for these products and what is the most popular product amongst the majority of our customers.

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
0	TM195	18	Male	14	Single	3	4	29562	112
1	TM195	19	Male	15	Single	2	3	31836	75
2	TM195	19	Female	14	Partnered	4	3	30699	66
3	TM195	19	Male	12	Single	3	3	32973	85
4	TM195	20	Male	13	Partnered	4	2	35247	47
5	TM195	20	Female	14	Partnered	3	3	32973	66
6	TM195	21	Female	14	Partnered	3	3	35247	75
7	TM195	21	Male	13	Single	3	3	32973	85
8	TM195	21	Male	15	Single	5	4	35247	141
9	TM195	21	Female	15	Partnered	2	3	37521	85
10	TM195	22	Male	14	Single	3	3	36384	85
11	TM195	22	Female	14	Partnered	3	2	35247	66
12	TM195	22	Female	16	Single	4	3	36384	75
13	TM195	22	Female	14	Single	3	3	35247	75
14	TM195	23	Male	16	Partnered	3	1	38658	47

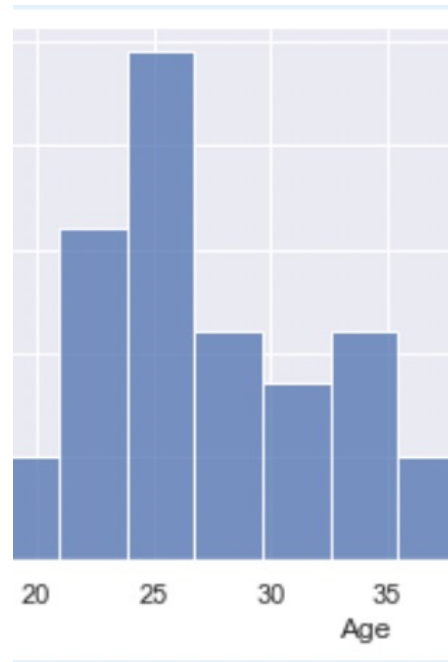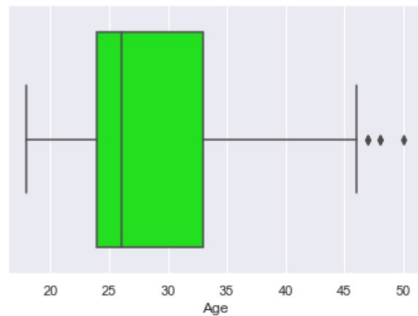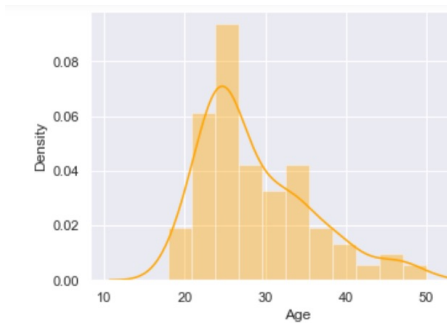# Exploratory Data Analysis (EDA) – Data description and Correlation

Observations:

▶ The mean for Age is close to the 75% percentile of the data.

▶ Age is right Skewed. Ages range from 18 years (Min) old to 50 years old (Max).

▶ The average age of the group in the dataset is close to 29 years of age with a standard deviation of 7 years.

▶ There is a huge gap between miles. Miles range from 21 miles to 360 miles.

▶ The mean for Education and the 75% percentile are close in numbers to each other. Meaning that most people in our data set have higher number of education in years.

▶ There is a positive correlation between Education and Income.

▶ We can also observe a positive correlation between Miles and Usage and Miles and fitness. Meaning that the more the products are used, the more fitness is gained, more miles can be covered/runned.

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	Age	Education	Usage	Fitness	Income	Miles
count	180.000000	180.000000	180.000000	180.000000	180.000000	180.000000
mean	28.788889	15.572222	3.455556	3.311111	53719.577778	103.194444
std	6.943498	1.617055	1.084797	0.958869	16506.684226	51.863605
min	18.000000	12.000000	2.000000	1.000000	29562.000000	21.000000
25%	24.000000	14.000000	3.000000	3.000000	44058.750000	66.000000
50%	26.000000	16.000000	3.000000	3.000000	50596.500000	94.000000
75%	33.000000	16.000000	4.000000	4.000000	58668.000000	114.750000
max	50.000000	21.000000	7.000000	5.000000	104581.000000	360.000000

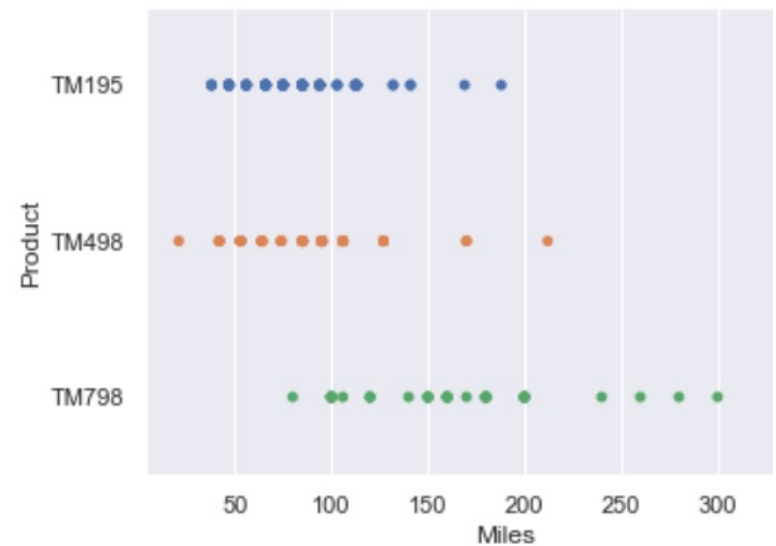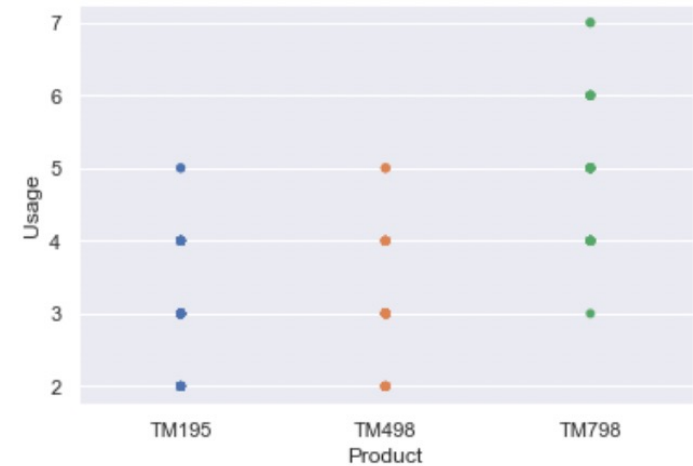# Exploratory Data Analysis (EDA) – Univariate analysis of Age distribution

observation:

► We can see that the median age is between 26-27 years old. There are also a few outliers above 45 years and older.

Exploratory Data Analysis (EDA) – Bivariate Analysis of Products

Observation:

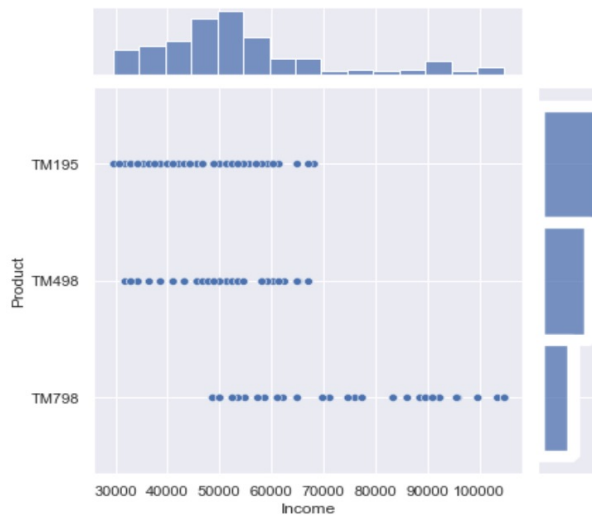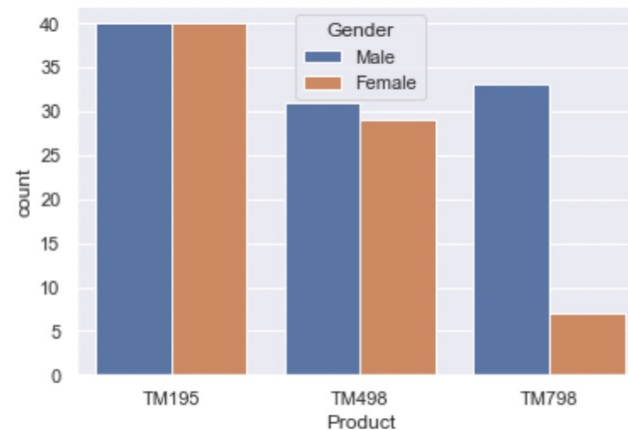▶Product TM798 has the higher usage score from the three products we have and, more miles are run on it.

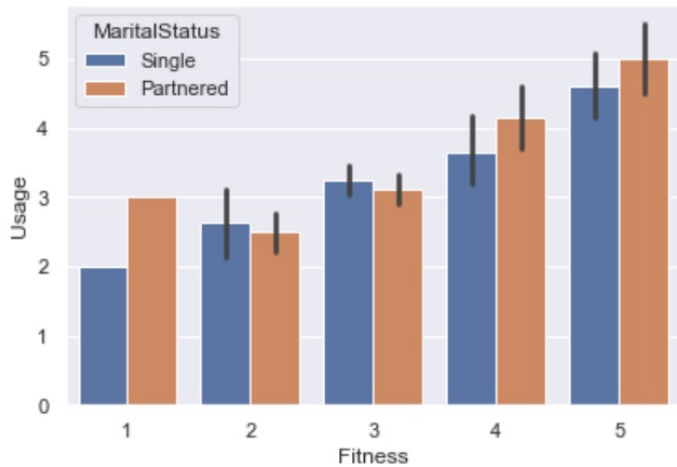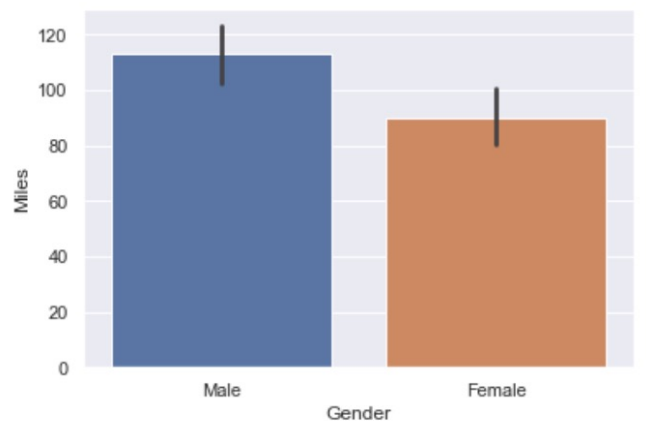# Exploratory Data Analysis (EDA) – Bivariate Analysis of Product

Observations:

▶ We can see that Product TM195 is equally and proportionally used by both genders and that product TM798 is used majorly by Male customers.

▶ Seems like the customers with higher income are the ones buying or using product TM798 the most.

Exploratory Data Analysis (EDA) – Bivariate Analysis by Marital Status and Gender

Observations:

Male customers ran more miles overall that Female customers.

People who are partnered seem to be the ones who have the higher usage scores and higher fitness rates.

Cardio Good Fitness customers

Conclusion

▶Product TM195 is liked and use by both male and female customers. Product TM798 on the other hand, is mostly is more attractive for male customers. Customers who buy product TM798 the most, are those with higher income. Product TM798 has the highest usage score from the three products we have.

▶Female customers tend to prefer products TM498 and TM195.

▶There male customers group is larger than the female customers group.

▶Male customers tend to run more miles overall that Female customers. But people who are partnered seem to be the ones who use the products more and have higher fitness rates.

▶We can also observe a positive correlation between Miles and Usage and Miles and fitness. Meaning that the more the products are used, the more fitness is gained, more miles can be covered/runned.

▶The products seem to be more popular amongst younger customers (around their mid to late 20s).

Cardio Good Fitness customers

Recommendations

Make advertisements and promotions to attract more young and single buyers and more females and work a little bit more in attracting those buyers.

There is an important segment of customers with higher income and high usage of the products that could be a great market to keep on studying and trying to capture and grow the business this way. It would be good to see why male customers tend to buy more a certain product TM798 and these are the ones preferred by people with higher income as well.

We could ask people to complete satisfaction surveys about there purchase of the products at the store, why they chose it, how did they find the service of the store and the overall quality of the machines.