

Cardio Good Fitness - Case Study

Background

"**Cardio Good Fitness**" is a home and commercial fitness equipment store, that specializes in their cardio equipment offerings. They have recorded various customer attributes for different treadmill product(s) they have sold, in order to understand and gain insights out of the data which will be beneficial for their business.

Objective

To explore and visualize the customer data on different treadmill products, gather insightful and/or actionable information on customer characteristics with respect to their products which will help them targeting new customers.

- **We will focus to find -**

- Customer profiles across products
- Gather insights on Customer characteristics
- Draw recommendations to help target new customers

Data Overview

The dataset contains various Customer attributes for different treadmill product

Variable	Description
Product	Model no of treadmill
Age	Customer's Age
Gender	Customer's Gender
Education	In no of years, of the Customer
MaritalStatus	Customer's Marital status
Usage	Average no# of times Customer intends to use the treadmill per week
Fitness	Self rated fitness score of the customer (5 - very fit, 1 - very unfit)
Income	Income of the Customer
Miles	Expected to run

Observations	Variables
180	9

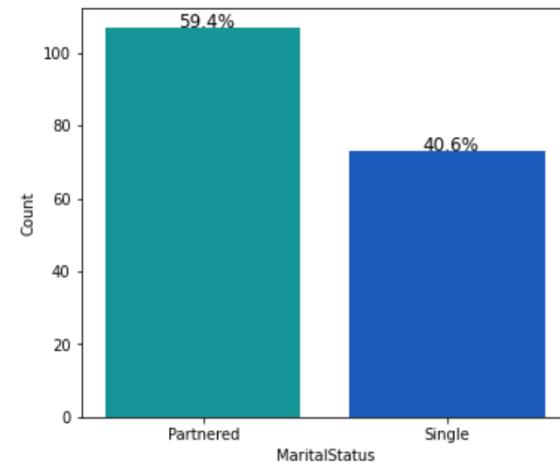
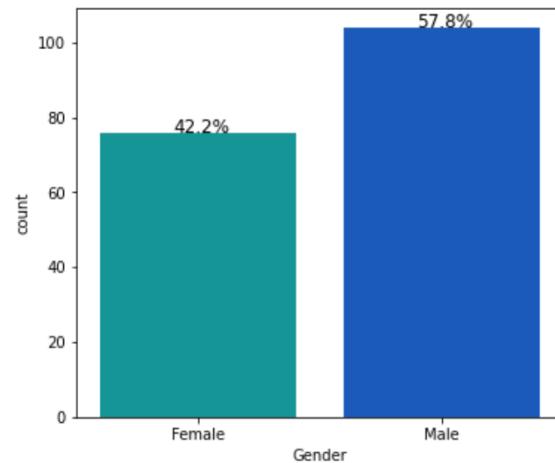
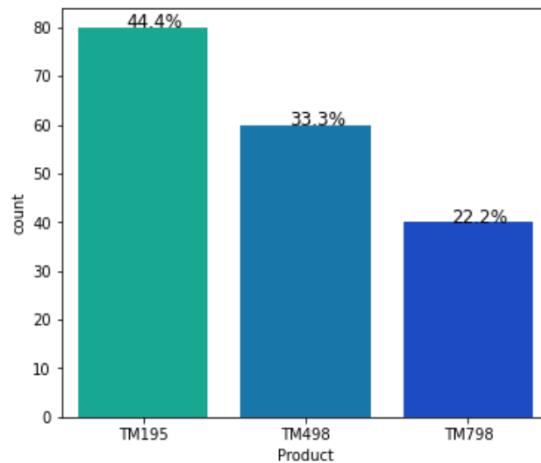
Notes:

1. Dataset looked clean and consistent with the data dictionary provided.
2. There were no missing values across all variables.

Exploratory Data Analysis – Univariate Product, Gender, Marital Status

In this dataset there are 3 main Categorical features present. Below is a snapshot of how their proportions are

Proportions of Unique values in each Category

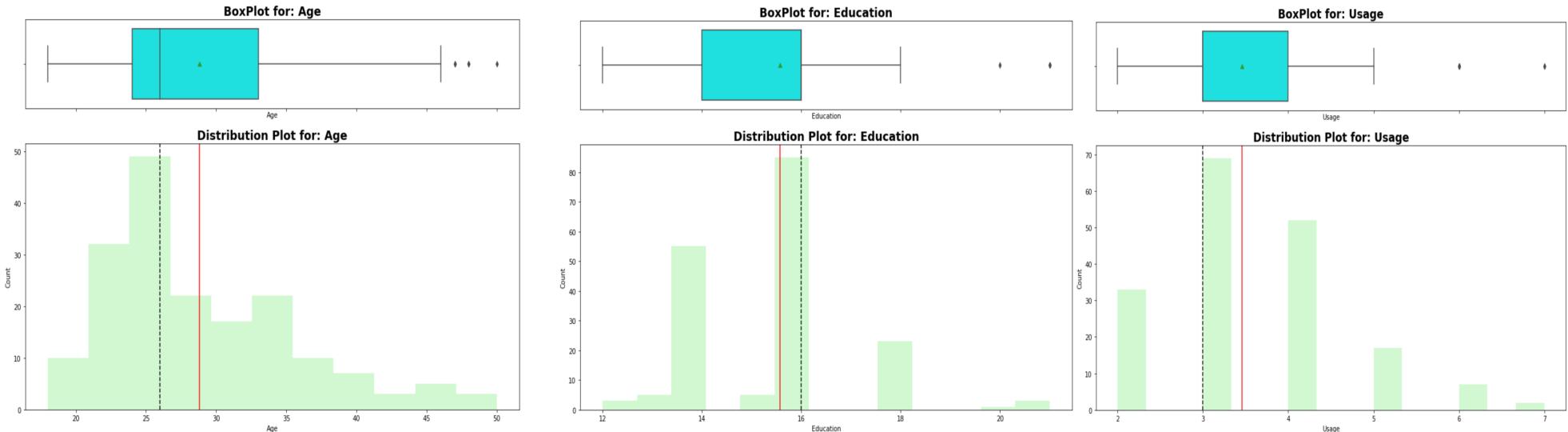


Observations:

- 3 unique treadmill models are present in the dataset.
- TM195 has the highest sales with almost 45 % of total sales, where as TM798 is lowest with 22% of total sales.
- More customers are male, ~ 58%
- Close to 60% of customers are married

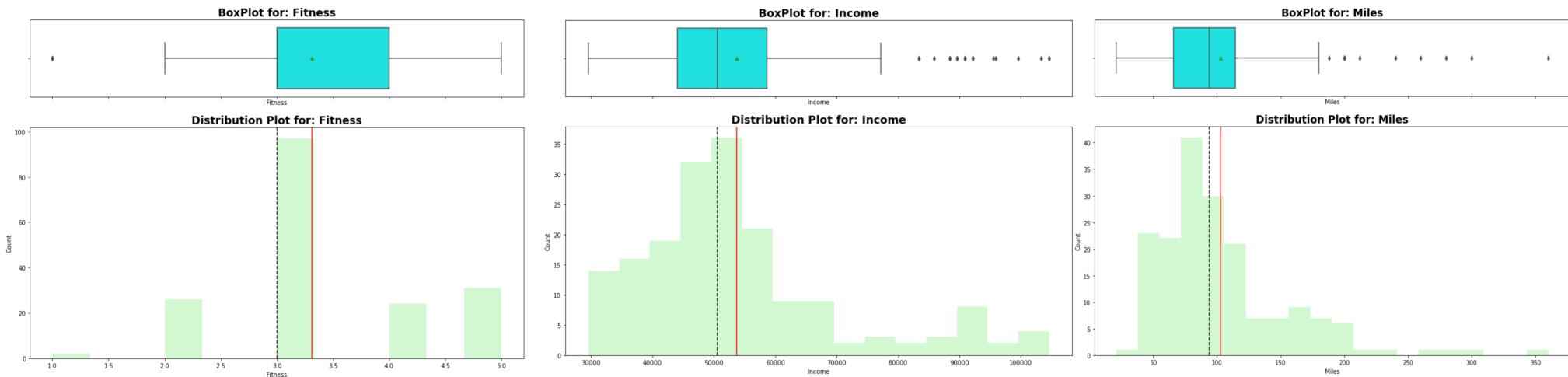
Exploratory Data Analysis – Age, Education, Usage

Let's now explore the attributes of customers presented in the dataset and how they are distributed



- Majority of the customers are below age ~35.
- Outliers to the right tells us there are few customers who has very high age.
- Majority of the customers have Education of ~ 16 Years.
- Education can be observed as high as 21 for very few customers which could be outliers.
- Most customers would intend to use the products 3 or 4 times a week.
- There are customers who intends to use even 6 or 7 times a week.

Exploratory Data Analysis – Fitness, Income, Miles

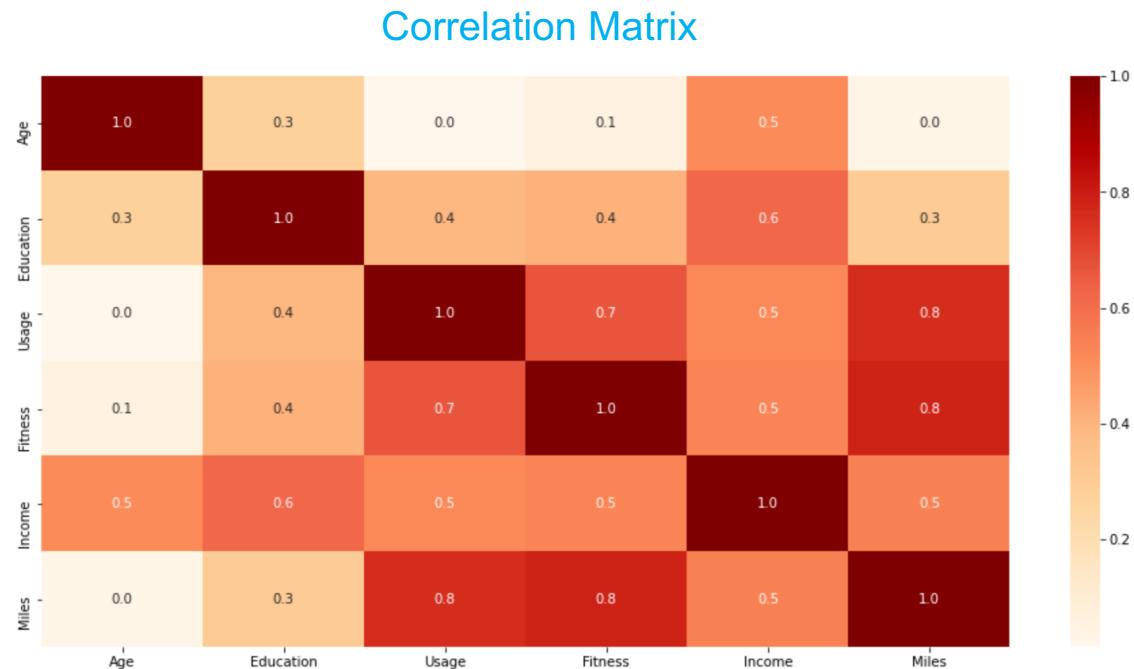


- Outliers to the left which tells us there are Customers who are Unfit (~1 in Fitness)
- Most customers are moderately fit ~ 3 Fitness level.
- Data spread is wide, and highly right skewed.
- Many outliers to the right, tells us few customers has very high Income.
- Many outliers to the right, tells us there are customers who intends to run very high miles
- Majority of the customers intend to use ~100 miles or less.

Exploratory Data Analysis – Correlation Matrix

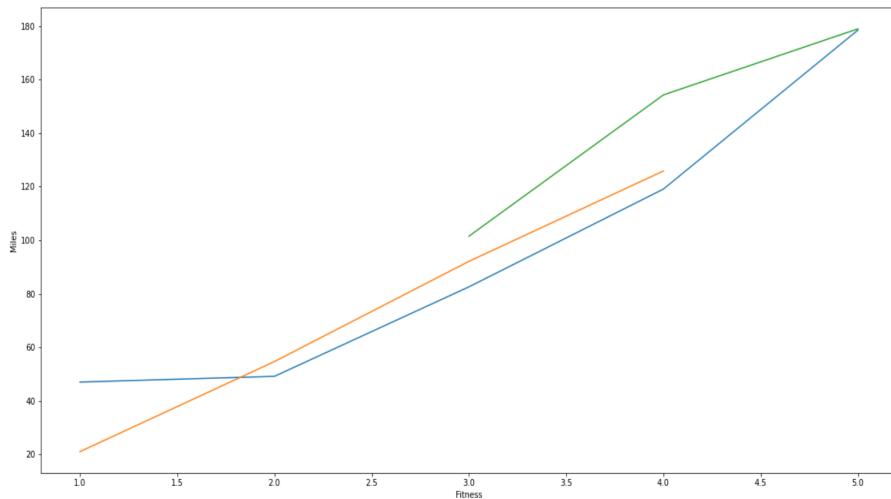
Observations:

- We can observe Fitness and Usage each of them has very high correlation with expected miles to run, which make sense.
- Fitness and Usage are also highly correlated among each other.
- Education and Income also shows high correlation, this also make sense.
- There are no variables which are negatively correlated.
- Income of customers have moderate and high correlation with multiple variables.

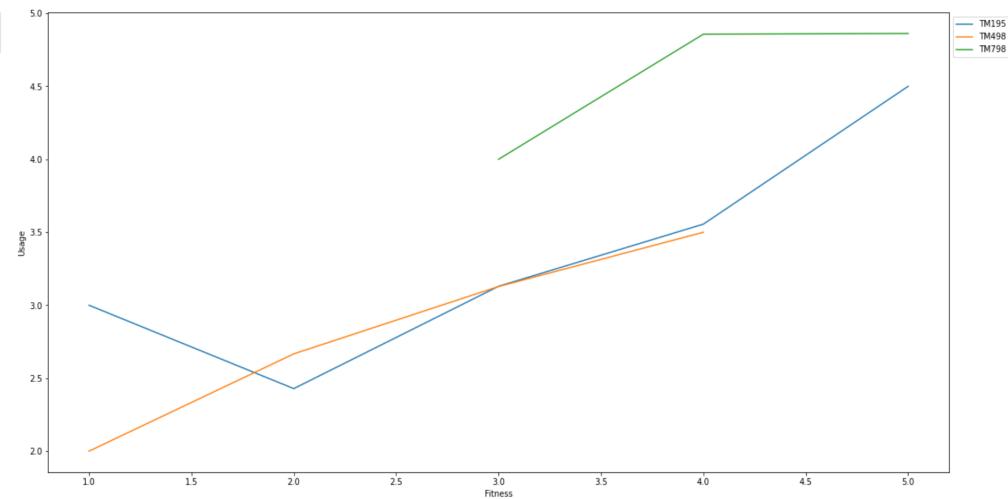


Exploratory Data Analysis – Products across Customer Attributes

Products across Fitness & Miles intend to run



Products across Fitness & Intended Usage

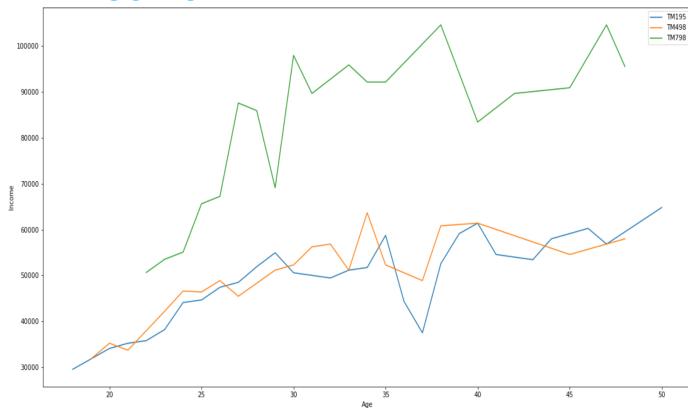


Observations:

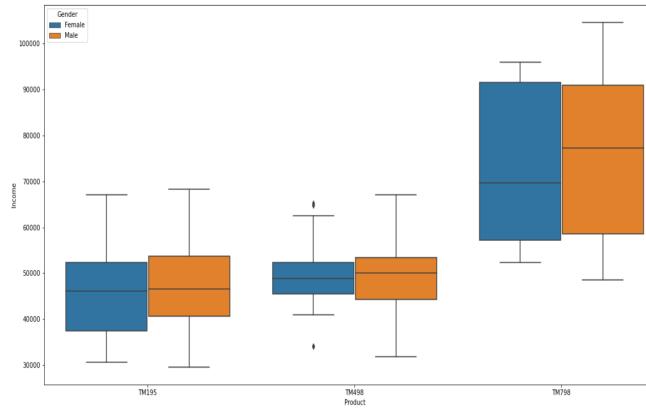
- Fit customers with intended usage is high and expect to run more than average miles are using TM798.
- TM195 is used by Customers with all Fitness level, whereas TM498 is not used by customers with Fitness level as 5

Exploratory Data Analysis – Products across Customer Attributes

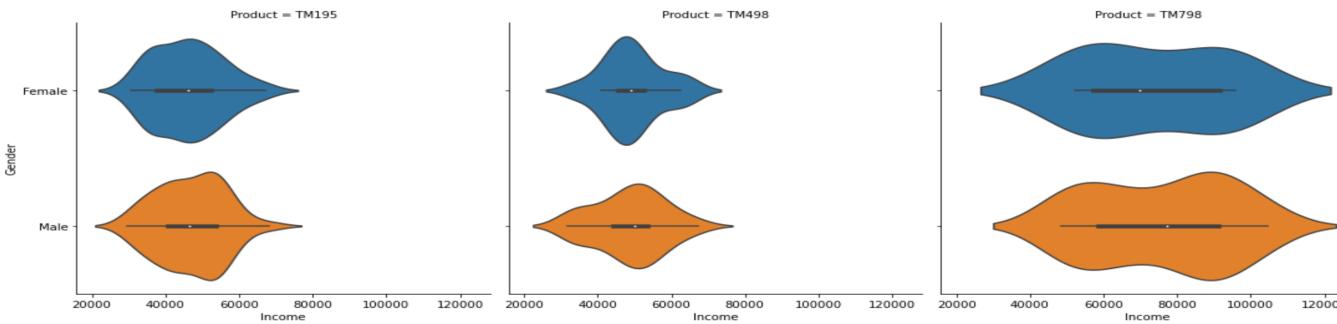
Products Across Age and Income



Income summary across Products by Gender



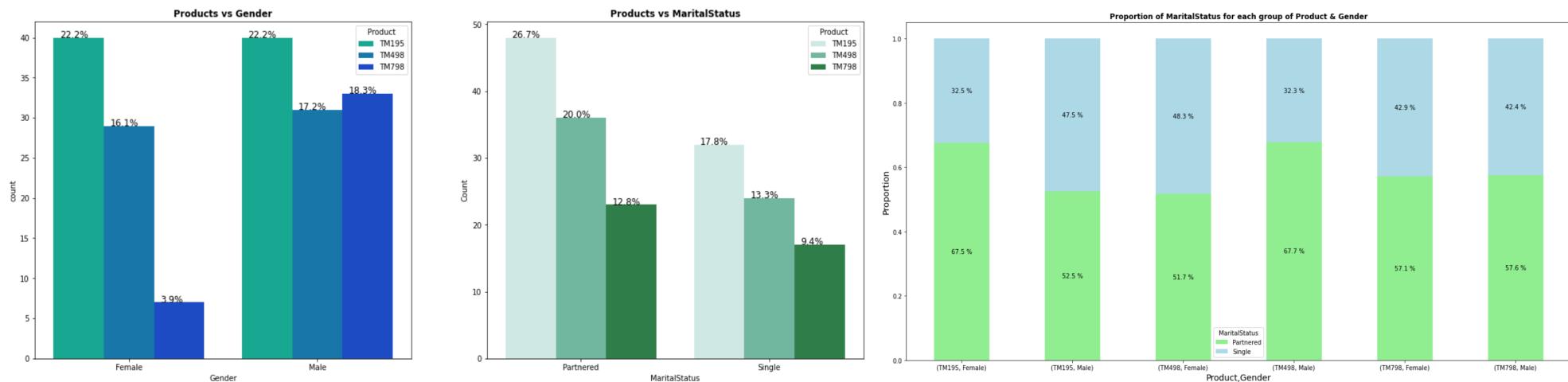
Dispersion of Income across products



Observations:

- Customer Income is one of the key attributes which we have observed.
- Customers with higher Income range (~ 60000) using TM798 product.
- No significant difference in Customer Income for TM195, TM498

Exploratory Data Analysis – Products across Customer Attributes



Observations:

- TM798 are predominantly used by Male customers.
- All Products are used by Customers who are Partnered than Singles.
- Even though we can't notice any significant difference in customer characteristics for TM195, TM498 products, from the proportion analysis we can see TM195 used more by Partnered Females where TM498 is by Partnered Males

Conclusion

After all the analysis we have been able to conclude –

- More male customers than female.
- Customers who are Partnered are using the products more than Singles.
- Customers who has higher than average income ~60000, has fitness level 3 or higher, intend to run more than 100 miles is using TM798.
- TM798 is predominantly used by Male customers.
- There are no significant differences in customer profile of other two products TM195, TM498.
- Customers with income less than ~60000 are using one of these two products TM195, TM498.

Recommendation

- TM195 is the top selling product, product availability should be ensured.
- TM798 shows more potential with Male customers with higher income level, Marketing strategy should target that segment of customers as higher potentials.
- Even though we haven't observed significant differences in customer characteristics for TM195, TM498 or much difference in total sales, however TM195 is more popular among Females who are married, and TM498 among Males who are married. It should be kept in mind during target marketing.
- Procure more data with month/year wise sales along with price data, it will help narrow down customer segments for more precise target marketing.
- Procure data on performance and endurance of different models, merging this data with customer sales will help further drill down on customer's choice as we have observed who intend to use more or run more miles are choosing TM798 over other models.
- Procure data on Customer has Gym membership/Access to Gym or not could help us identify and observe further insights on why there are less Customers who are Singles

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Power Ahead

Happy Learning !

