

# Aerofit Project

# Probability & Statistics

## Business Case Study

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### Introduction: Aerofit

Aerofit is a leading brand in the field of fitness equipment. Aerofit provides a product range including machines such as treadmills, exercise bikes, gym equipment, and fitness accessories to cater to the needs of all categories of people.

The Google Colab Notebook link is [here](#).

The Project can be found on GitHub using the following [link](#).

### Business Problem

The market research team at AeroFit wants to identify the characteristics of the target audience for each type of treadmill offered by the company, to provide a better recommendation of the treadmills to the new customers. The team decides to investigate whether there are differences across the product with respect to customer characteristics.

### Product Portfolio

- The KP281 is an entry-level treadmill that sells for \$1,500.
- The KP481 is for mid-level runners that sell for \$1,750.
- The KP781 treadmill is having advanced features that sell for \$2,500 Metric

We will use count of users, probability, conditional probabilities to evaluate the users and create a customer profile for each product.

Dataset can be found [here](#).

Preliminary info about the features of the Dataset.

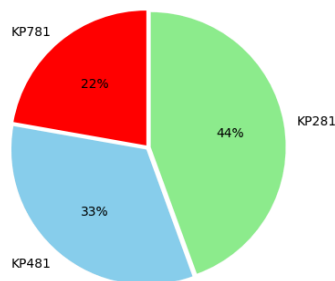
- Product Purchased: KP281, KP481, or KP781
- Age: In years

- Gender: Male/Female
- Education: In years
- MaritalStatus: Single or partnered
- Usage: The average number of times the customer plans to use the treadmill each week.
- Income: Annual income (in \$)
- Fitness: Self-rated fitness on a 1-to-5 scale, where 1 is the poor shape and 5 is the excellent
- Miles: The average number of miles the customer expects to run each week.

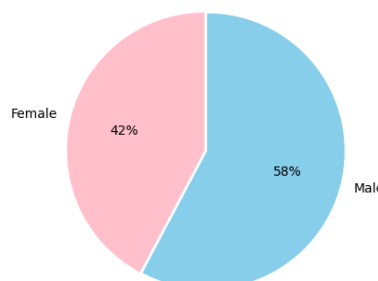
## NON-GRAPHICAL ANALYSIS

- 180 data points and 9 features
- Product, Gender and Marital Status are in String format rest everything is integer.
- No null values are present
- The selling order of the products is KP281 > KP481 > KP781
- Male customers have 58% share in data while Female Customers have only 42% share.
- 59% Customers are married while 41% of customers are single.
- Average usage of Treadmill each week is 3.45 times.
- Average income of customers are \$53,720(approx)/-
- Average distance a customer runs on a treadmill is 103 Miles.
- More than 50% Customers have a Fitness score of 3.

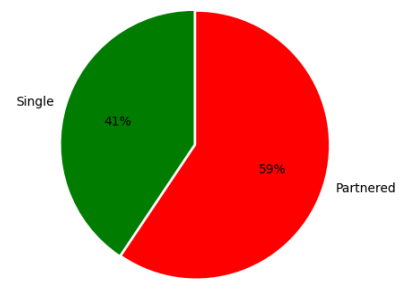
Distribution of Treadmills Models



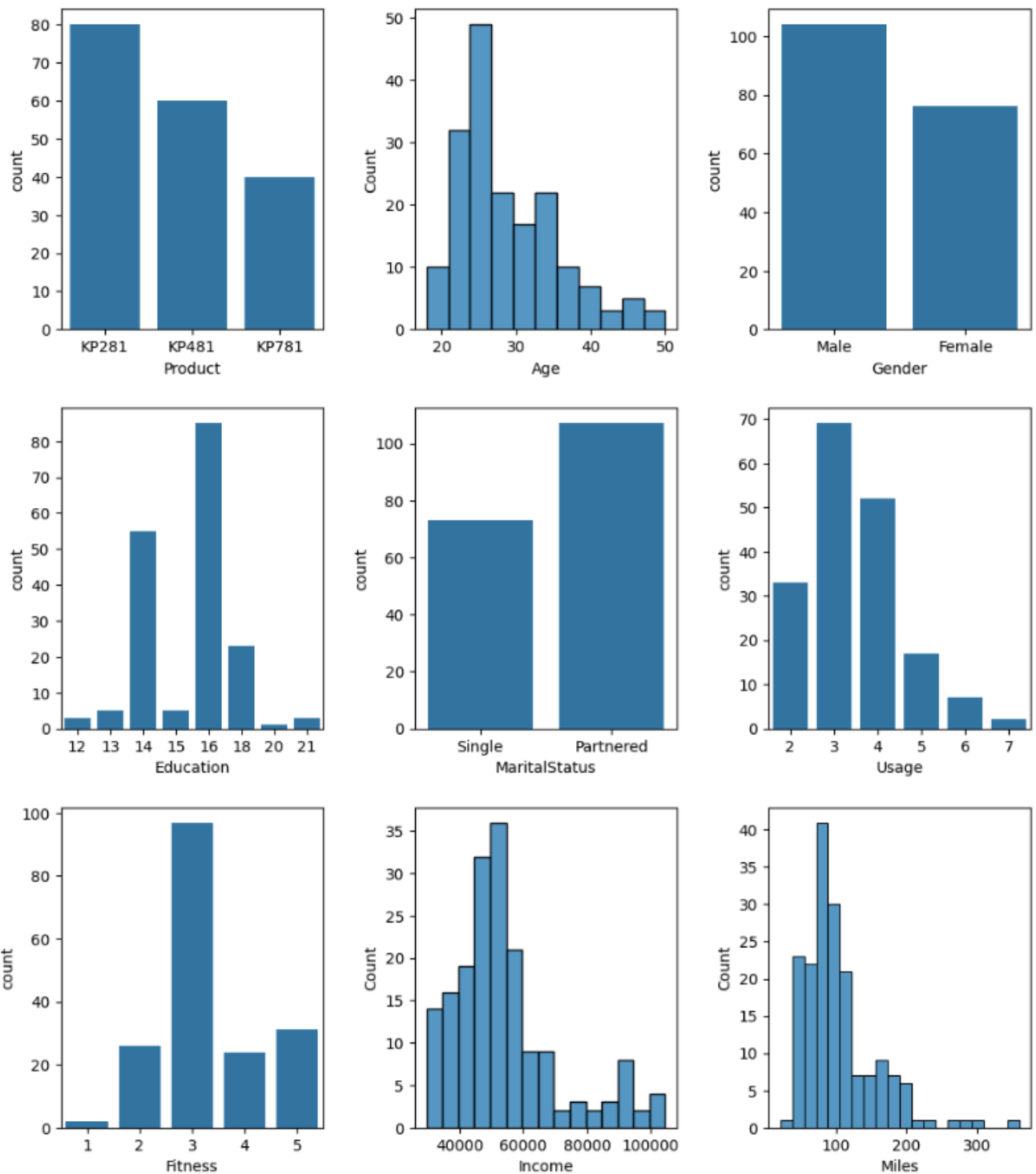
Distribution of Gender



Distribution of Marital Status



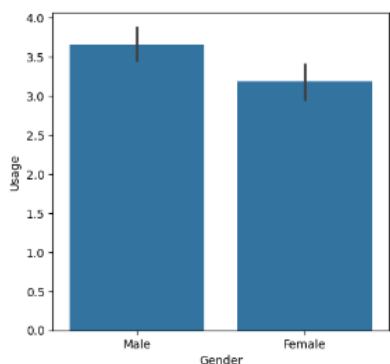
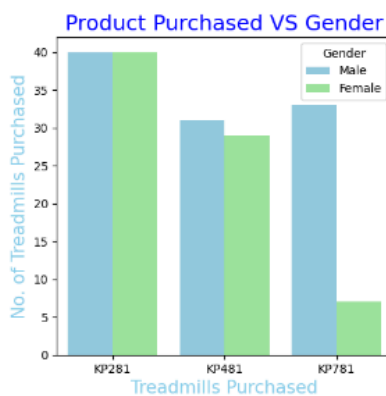
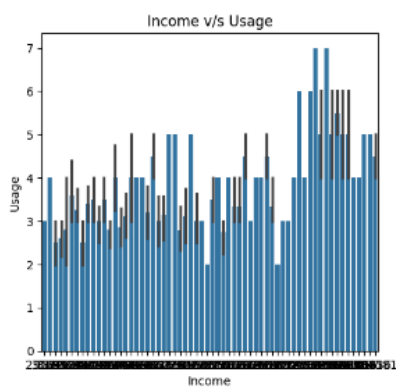
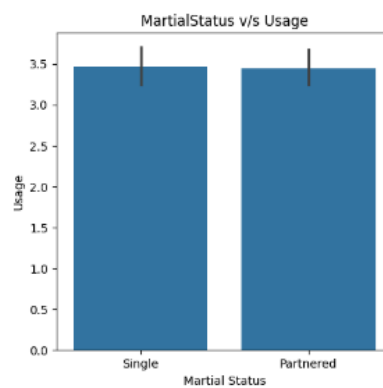
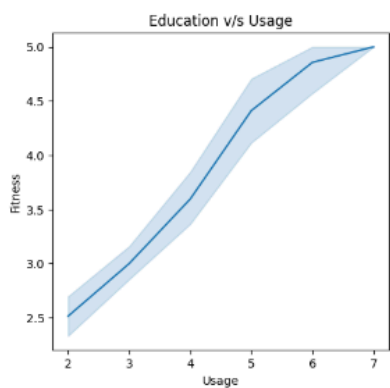
# GRAPHICAL ANALYSIS



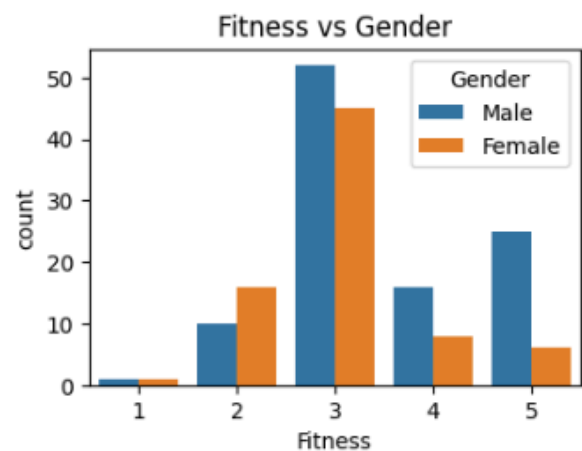
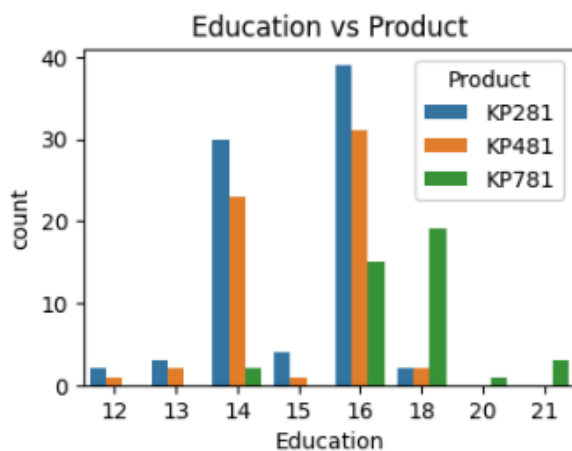
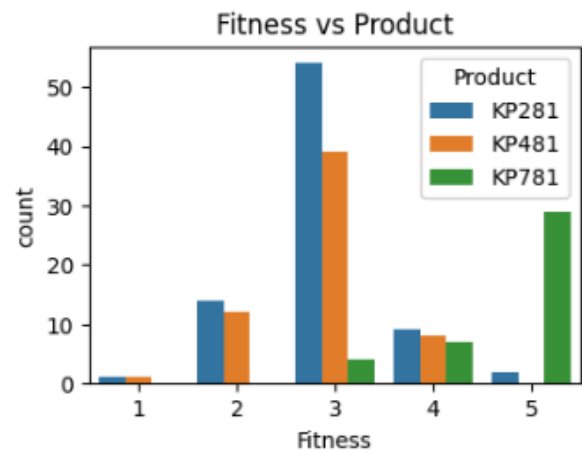
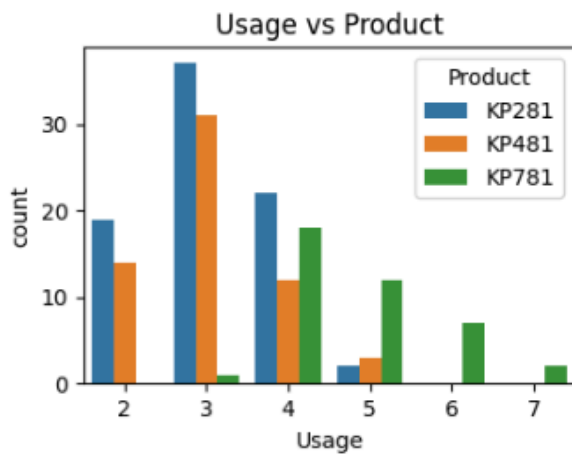
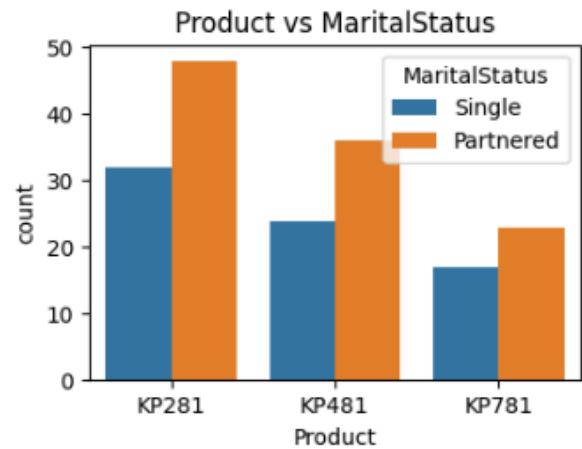
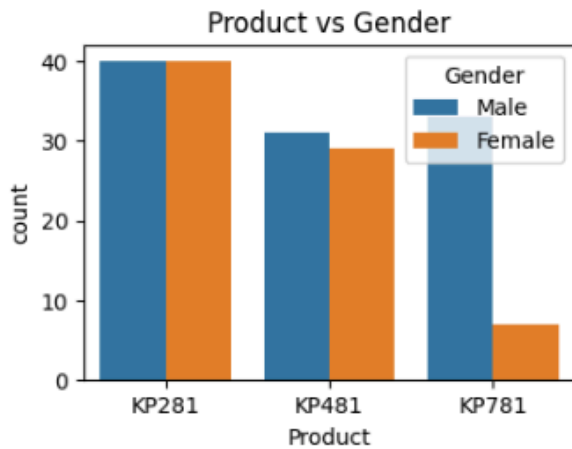
- Maximum Number of customers are in Age group of 20 to 30 Years.
- The Company has more number of Male customers than Female customers.

- Maximum Customers have 14-16 Years of Education.
- Maximum Number of customers Lies between \$45,000 to \$60,000 Income Group
- We observe an almost linear relation between education and usage.
- There is almost no relation between marital status and usage
- We couldn't get better insights from income to usage
- Not much insights could be gathered from Gender vs Usage, but we see a general decline in the usage from male to female.

### Some analysis

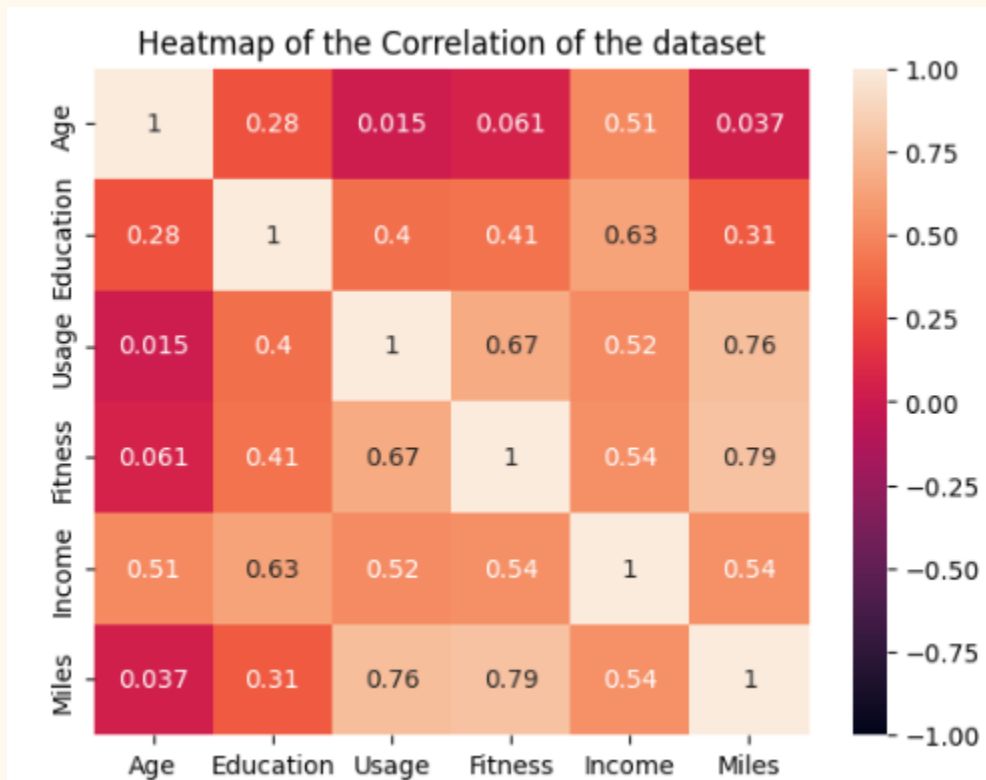


## Bivariate Analysis



- People with 16 years of education prefer to buy KP281
- People whose usage is more than 3 days a week prefer machine KP781

- People with more than 16 years of education prefer to use KP781



## Observations

- Most sold Treadmill model is 'KP281' while the least sold Treadmill is 'KP781'
- Maximum Number of customers are in Age group of 20 to 30 Years.
- The Company has more number of Male customers than Female customers.
- Maximum Customers have 14-16 Years of Education.
- Maximum Number of customers Lies between 45k to 60k Income Group
- The company has more number of Partnered customers than Single Customers.
- Maximum Number of Customers use the Treadmill for 3 days a week.
- Most of the customers gave them a self rated Fitness score of 3 while only some customers gave them 1.
- Maximum number of customers runs 94 miles per week on an average on Treadmills.

## Recommendations

### - For 'KP281'

- Both Male and Female customers are equally likely to buy the model.
- Company should target more customers with Usage of 3 days/week for 'KP281'.
- Company should target more Partnered customers than Single customers for 'KP281'.
- Company should target more customers with 16 years of education for 'KP281'.

### - For 'KP481'

- Both Male and Female customers are almost equally likely to buy 'KP481'. so, the company should target both of them.
- Company should target more customers with 14-16 years of education for 'KP481'
- Company should target more Partnered customers than Single customers for 'KP481'.
- Company should target more customers with Usage of 3 days/week for 'KP481'.

### - For 'KP781'

- Male customers are more likely to buy this product.
- Company should target more customers with 18 years of education for 'KP781'.
- Company should target more customers with Usage of 4 days/week for 'KP781'.
- Company should target more Partnered customers than Single customers for 'KP781'.