**Insights**

* Models sold (numbers):
  + 80 Nos of KP281
  + 60 Nos. of KP481
  + 40 Nos. of KP781
* Gender distribution of customers
  + Males – 57.8%
  + Females – 42.2%
* Marital distribution of customers
  + Partnered – 59.4%
  + Single – 40.6%
* Majority of customer have a usage between 2 to 4 times a week – about 85%
* Self-Evaluation of Fitness level
  + 97 customers out of 180 have evaluated themselves as 3 on fitness scale – about 54%
  + 152 customers out of 180 have evaluated themselves as >= 3 on fitness scale – 84%
* 152 customers are from the age group of 18 to 35 (Young Adults (18-25) and Adults (25-35)) – 84%
* 172 customers have more than 13 years of education – 98.3%
* 106 customers belong to moderate income group of 40 to 60 K – 58.9%
* Nearly 78% customers have less than 60 K Income
* 157 customers want use treadmill between 50 to 200 miles per week – 87.2%
* Data shows strong preference for the treadmill model KP781 among user who have higher education, higher income levels, and intend to engage in running activities exceeding 150 miles per week.
* Treadmill model KP781 is preferred more by male User.
* Both treadmill models, KP481 and KP281, show equal distribution of both the gender
* For all the three treadmill models, there is uniform distribution of Married and Single customers with married customers showing slightly higher preference
* From the pair plot we can see Age and Income are positively correlated and heatmap also suggests a strong correlation between them
* Education and Income are highly correlated as its obvious. Education also has significant correlation between Fitness rating and Usage of the treadmill.
* Usage is highly correlated with Fitness and Miles as more the usage more the fitness and mileage.
* **Probability of product purchase w.r.t. gender**
  + The Probability of a treadmill being purchased by a female is 42%.
  + The conditional probability of purchasing the treadmill model given that the customer is female is
    - For Treadmill model KP281 - **22%**
    - For Treadmill model KP481 - **16%**
    - For Treadmill model KP781 - **4%**
  + The Probability of a treadmill being purchased by a male is 58%.
  + The conditional probability of purchasing the treadmill model given that the customer is male is -
    - For Treadmill model KP281 - **22%**
    - For Treadmill model KP481 - **17%**
    - For Treadmill model KP781 - **18%**
  + **What is the probability of a male customer buying a KP781 treadmill?**

**From above it is clear that the probability of male customer buying a KP781 treadmill is – 18%**

* **Probability of product purchase w.r.t. Age**
  + The Probability of a treadmill being purchased by a Young Adult (18-25) is 44%.
    - The conditional probability of purchasing the treadmill model given that the customer is Young Adult is
      * For Treadmill model KP281 - 19%
      * For Treadmill model KP481 - 16%
      * For Treadmill model KP781 - 9%
  + The Probability of a treadmill being purchased by an Adult (26-35) is 41%.
    - The conditional probability of purchasing the treadmill model given that the customer is Adult is -
      * For Treadmill model KP281 - 18%
      * For Treadmill model KP481 - 13%
      * For Treadmill model KP781 - 9%
  + The Probability of a treadmill being purchased by a Middle Aged (36-45) is 12%.
  + The Probability of a treadmill being purchased by an Elder (Above 45) is only 3%
* **Probability of product purchase w.r.t. Education** 
  + The Probability of a treadmill being purchased by a customer with Higher Education (Above 15 Years) is 62%.
    - The conditional probability of purchasing the treadmill model given that the customer has Higher Education is
    - For Treadmill model KP281 - 23%
    - For Treadmill model KP481 - 18%
    - For Treadmill model KP781 - 21%
  + The Probability of a treadmill being purchased by a customer with Secondary Education (13-15 yrs) is 36%.
    - The conditional probability of purchasing the treadmill model given that the customer has Secondary Education is -
      * For Treadmill model KP281 - 21%
      * For Treadmill model KP481 - 14%
      * For Treadmill model KP781 - 1%
  + The Probability of a treadmill being purchased by a customer with Primary Education (0 to 12 yrs) is only 2%.
* **Probability of product purchase w.r.t. Income**
  + The Probability of a treadmill being purchased by a customer with Low Income (<40k) is 18%.
    - The conditional probability of purchasing the treadmill model given that the customer has Low Income is
      * For Treadmill model KP281 - 13%
      * For Treadmill model KP481 - 5%
      * For Treadmill model KP781 - 0%
  + The Probability of a treadmill being purchased by a customer with Moderate Income (40k - 60k) is 59%.
    - The conditional probability of purchasing the treadmill model given that the customer has Moderate Income is -
      * For Treadmill model KP281 - 28%
      * For Treadmill model KP481 - 24%
      * For Treadmill model KP781 - 6%
  + The Probability of a treadmill being purchased by a customer with High Income (60k - 80k) is 13%
    - The conditional probability of purchasing the treadmill model given that the customer has High Income is -
      * For Treadmill model KP281 - 3%
      * For Treadmill model KP481 - 4%
      * For Treadmill model KP781 - 6%
  + The Probability of a treadmill being purchased by a customer with Very High Income (>80k) is 11%
    - The conditional probability of purchasing the treadmill model given that the customer has High Income is -
      * For Treadmill model KP281 - 0%
      * For Treadmill model KP481 - 0%
      * For Treadmill model KP781 - 11%
* **Probability of product purchase w.r.t. Marital Status**



* **Probability of product purchase w.r.t. Weekly Usage**



* **Probability of product purchase w.r.t. Customer Fitness Level**



* **Probability of product purchase w.r.t. Weekly Mileage**

Light Activity: 0 – 50 miles

Moderate Activity: 51 – 100 miles

Active Lifestyle: 101 – 200 miles

Fitness Enthusiast: 200 – 365 miles



* Customer Profiles for each Product
  + Probability of purchase of KP281 – 44%
  + Probability of purchase of KP481 – 33%
  + Probability of purchase of KP781 – 22%
  + KP281
    - Age of customer mainly between 18 to 35 years with few between 35 to 50 years
    - Education level of customer 13 years and above
    - Annual Income of customer below USD 60,000
    - Weekly Usage - 2 to 4 times
    - Fitness Scale - 2 to 4
    - Weekly Running Mileage - 50 to 100 miles
  + KP481
    - Age of customer mainly between 18 to 35 years with few between 35 to 50 years
    - Education level of customer 13 years and above
    - Annual Income of customer between USD 40,000 to USD 80,000, majority in 40 to 60K
    - Weekly Usage - 2 to 4 times
    - Fitness Scale - 2 to 4
    - Weekly Running Mileage - 50 to 100 miles
  + KP781
    - Gender – Male – 18%
    - Age of customer between 18 to 35 years
    - Education level of customer 15 years and above
    - Annual Income of customer USD 80,000 and above
    - Weekly Usage - 4 to 7 times
    - Fitness Scale - 3 to 5
    - Weekly Running Mileage - 100 miles and above

**Recommendations**

1. Company should run a focused marketing campaign for high-income, highly educated, young adult females for product KP781 as currently, the probability of females purchasing this product is only 4%
2. Company can consider introducing EMI / part payment schemes for customers so that lower and middle-income customers can buy higher-end treadmills KP781 and KP481
3. Overall, the probability of females buying the company’s treadmill product is 42% compared to men being at 58%. The company should run marketing campaigns focused on female customers to increase the probability of females buying their treadmill product