CardioGood Fitness Market Review

AdRight

Agenda

1. Introduction

2. Analysis
   a. Numerics
   b. Binaries

3. Customer Segmentation

4. Insights Summary

5. Recommendations

6. Extensions

1. Introduction

Purpose

The need to identify a profile of the typical customer for each treadmill and whether there are differences across the product lines.

Hypothesis

Matching treadmills with the right customer type will lead to increased likelihood of sales.

Objectives

- To understand the user traits of each products' customer base.

- To identify unique or shared characteristics of the customers who use each product and any potential gaps in their customer base.

- To recommend targeted marketing for each product so as to maximise sales.

Analysis - Proportion of Sales by Product
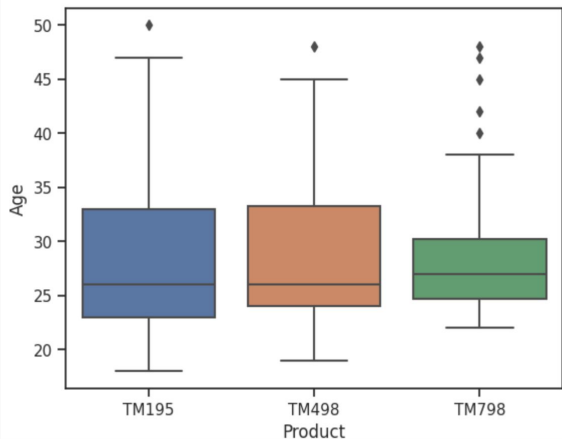
We want to find how advertising should be allocated:

First let's look at proportion of sales by model, then dig further into features per model.
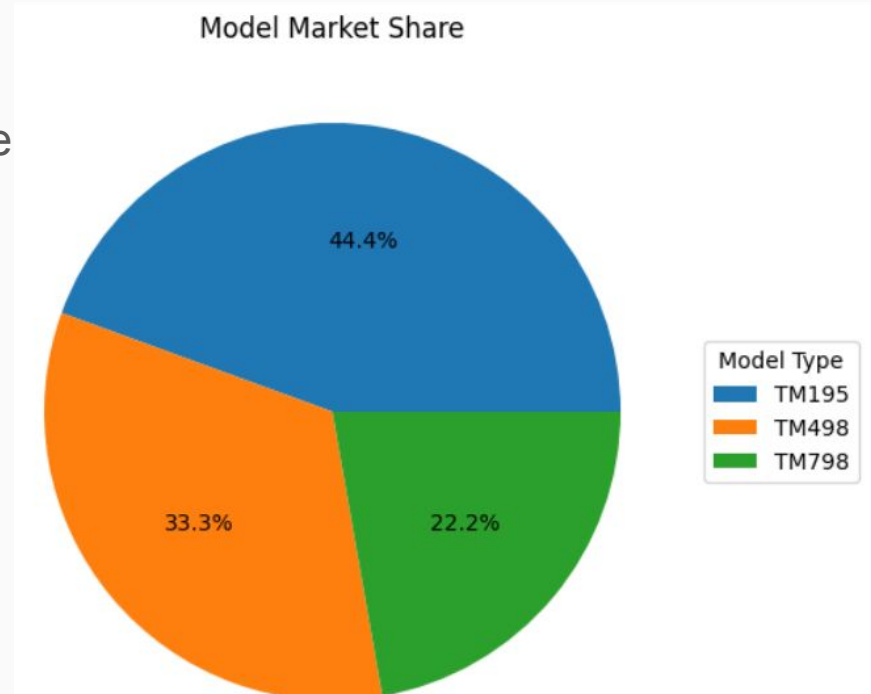
Model Market Share

44.4%

33.3%

22.2%

Model Type
TM195
TM498
TM798

What's the Customers Base and Does it Differ by Product?
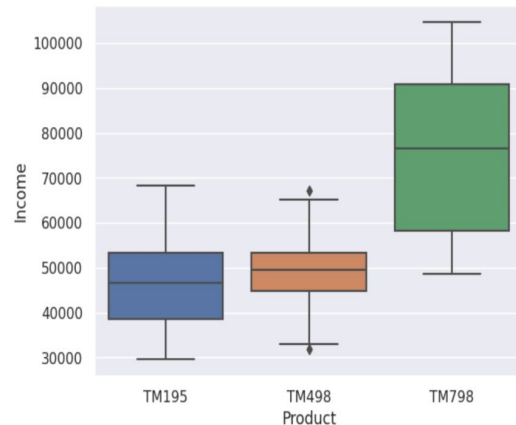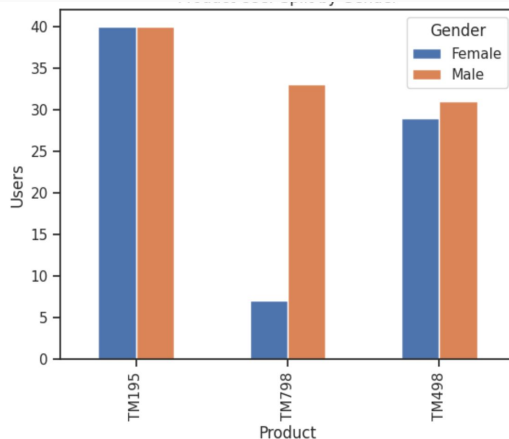
Understanding the customer base by product will help tailor marketing in order to improve sales.

TM195 and TM498 are equally used by men and women alike, but TM798 currently has a very strong appeal amongst the male customer base.

TM195 and TM498 have a broader range of age within their customer base.

TM798 has a younger customer base, although some of the more dedicated users are older.

The income of TM798 users is markedly greater, suggesting scope to position this product as the most premium.

What's the Customers Base and Does it Differ by Product?

Understanding the customer base by product will help tailor marketing in order to improve sales.

Users Ages

Users incomes

Users Educations
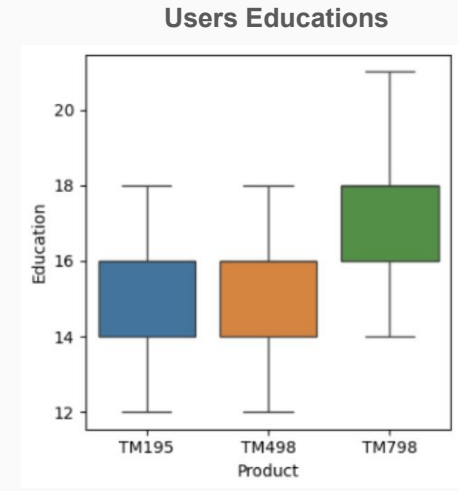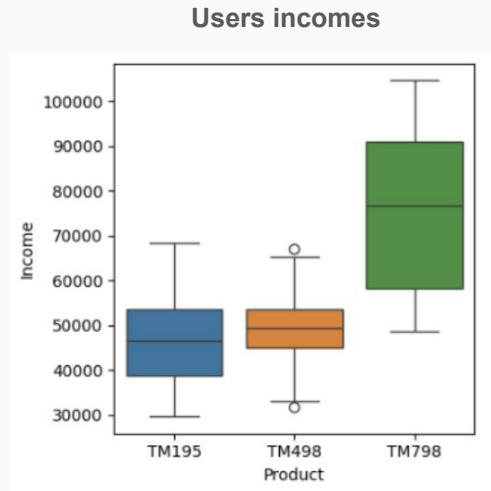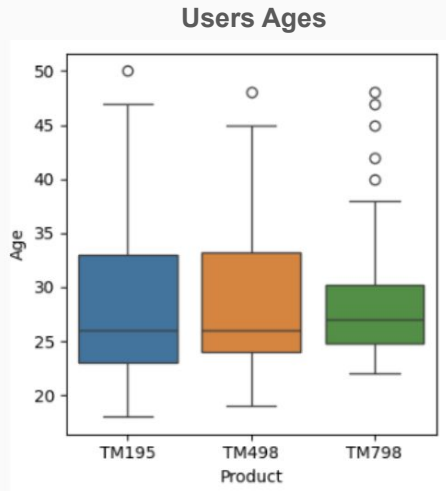
2a. Product Profiles by Age

TM798 skews most notably towards the under 30's user demo

Distribution of Age Groups for TM195 | Distribution of Age Groups for TM498 | Distribution of Age Groups for TM798

What's the Customers Base and Does it Differ by Product?

Understanding the customer base by product will help tailor marketing in order to improve sales.
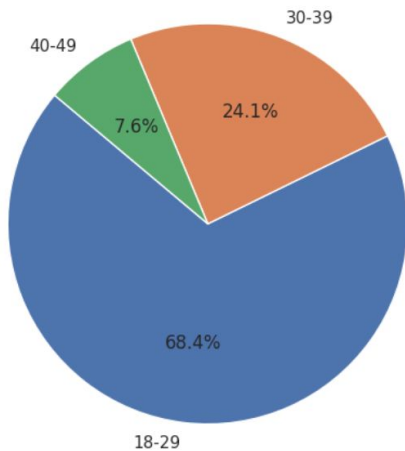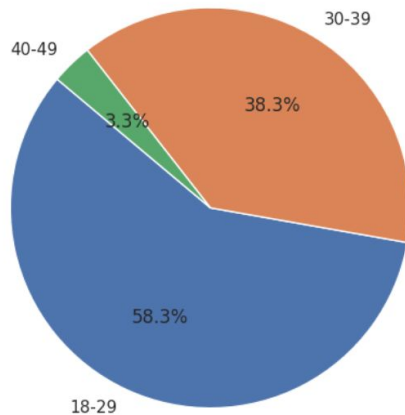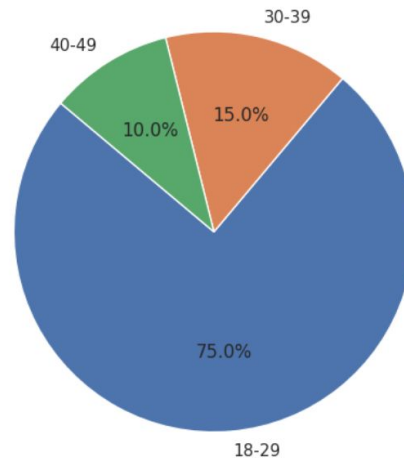

User reported usage
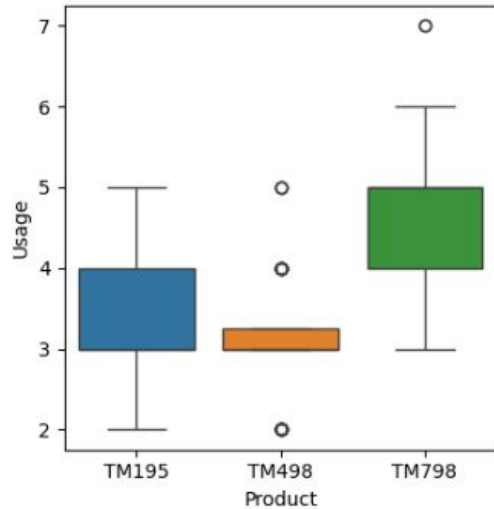
User reported miles run
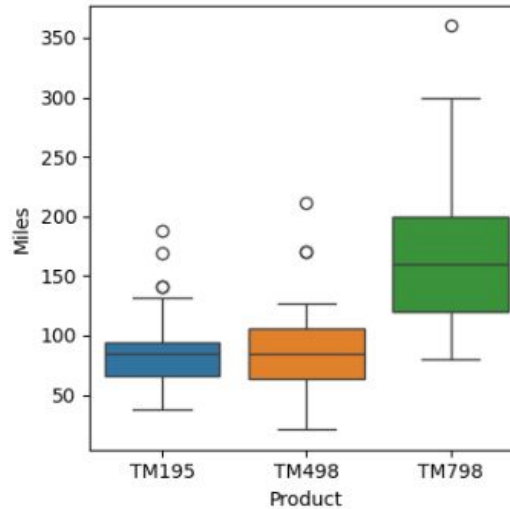
User reported fitness
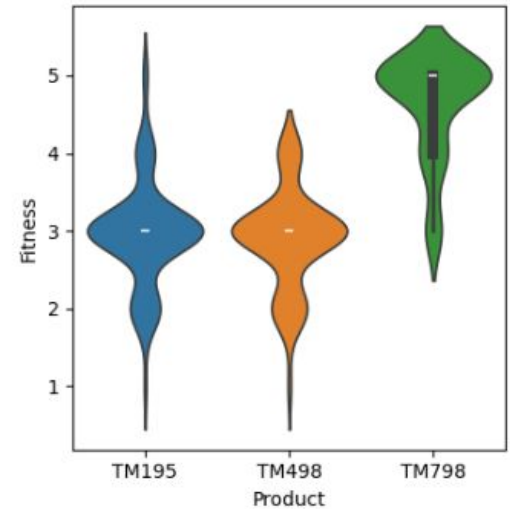
Average distance run per daily use

TM195
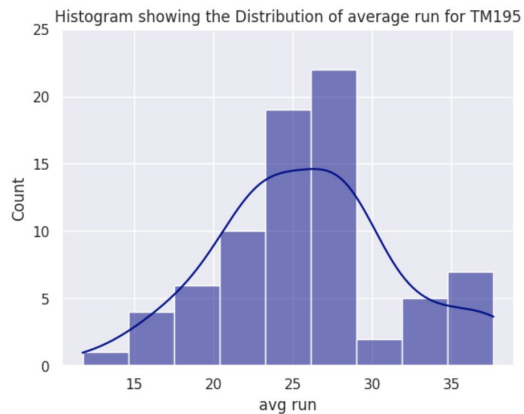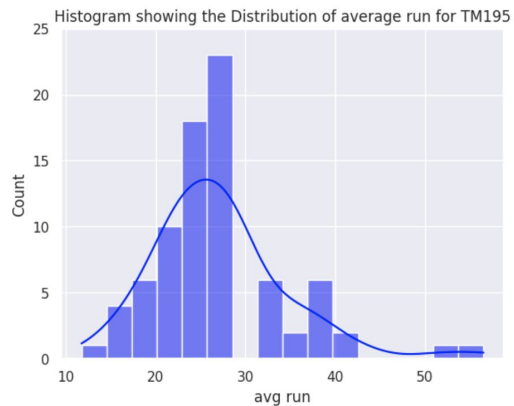
TM498
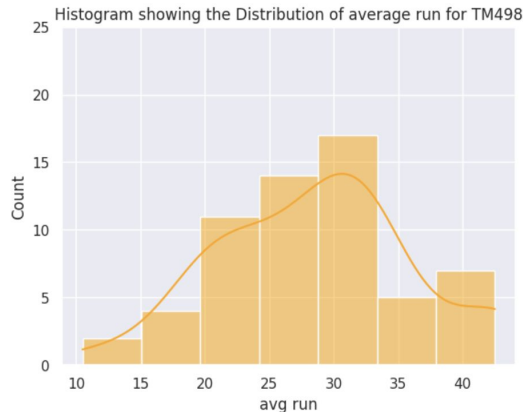
TM798
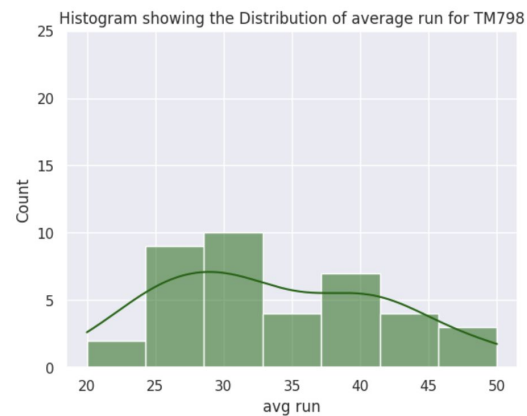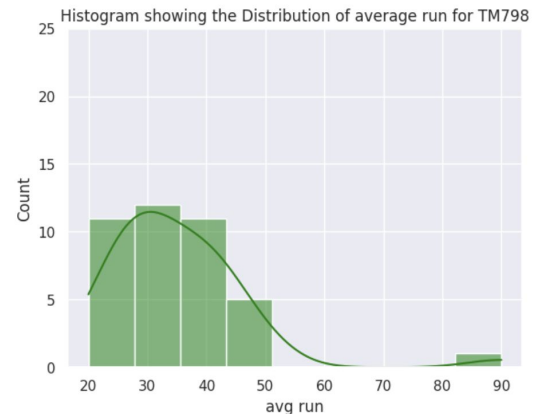
Gender

Marital Status
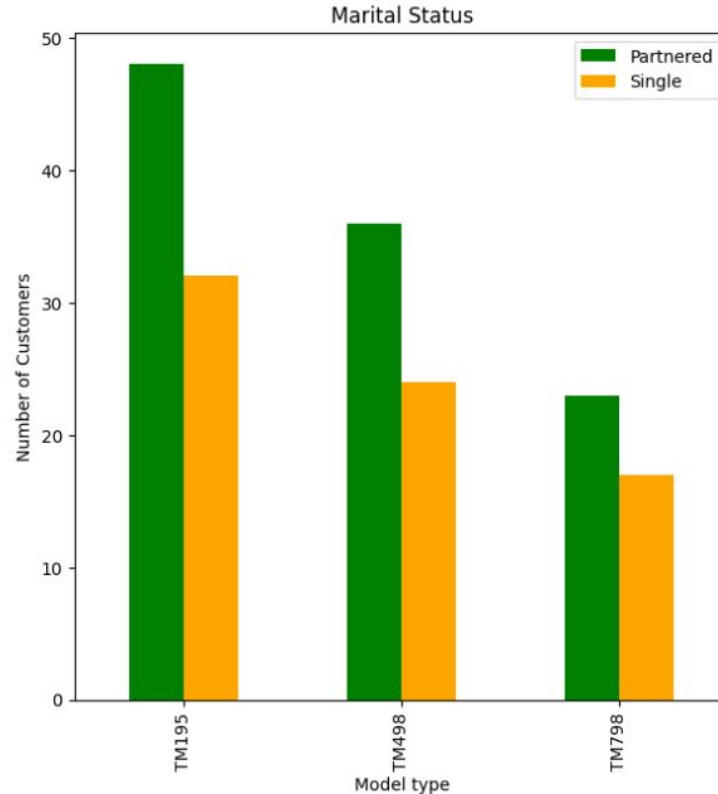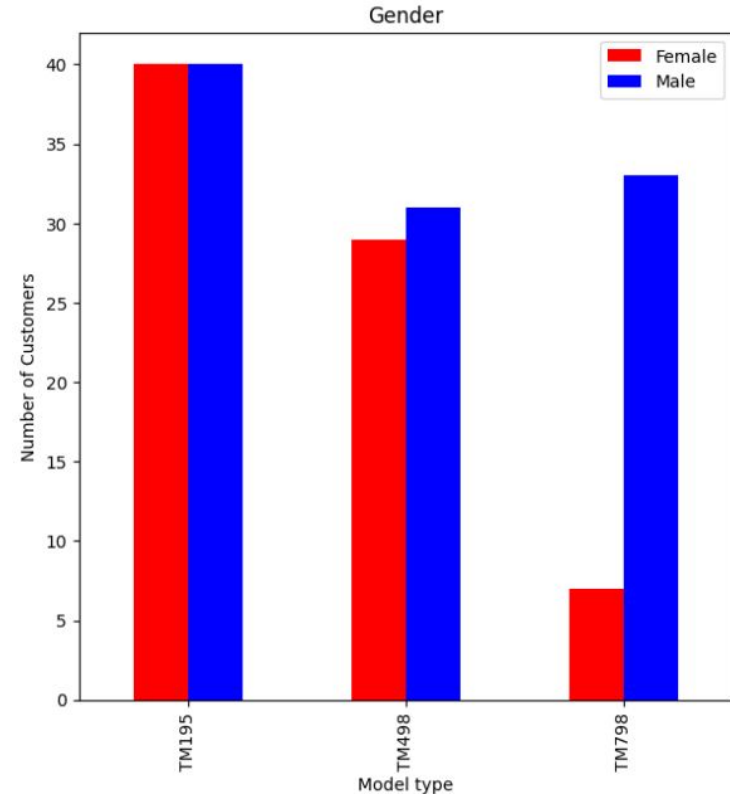
Binaries are type of data that can take one of two values.

Very few women are buying TM798.

More partnered people are buying treadmills for every treadmill model

Treadmill Model Distribution by Gender

Men distribute evenly across the treadmill types.

On the other hand, only 9% of women are buying the TM798, while the excess are buying 195s.
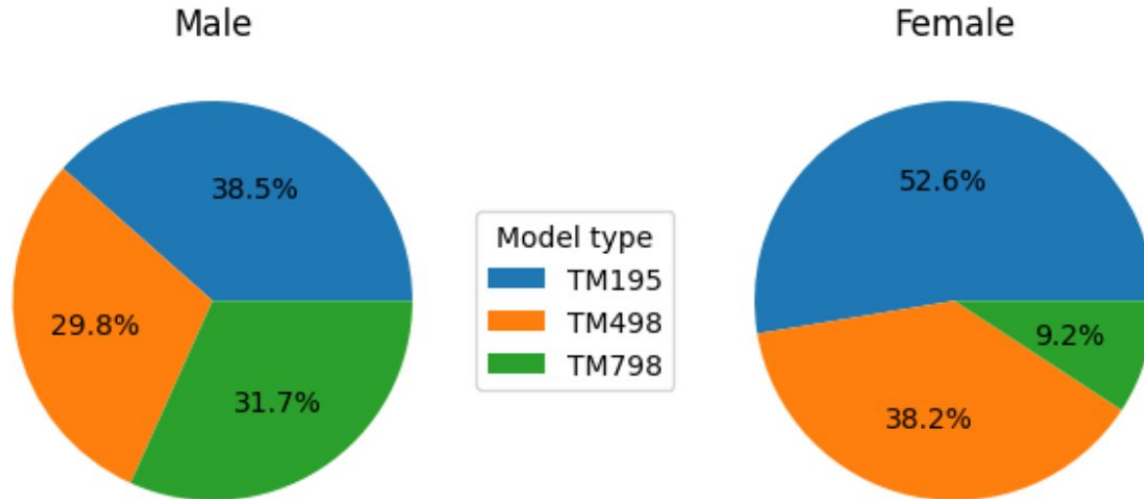
Marital Status Distribution

Office for National Statistics - in the UK in 2022, 49.4% of people were married.

However, in our data 59.4% are married, with a similar proportion across all model types

This suggests singles are less interested in treadmills..

Caveat: small sample size

Marital Status Distribution

59.4%

40.6%

Marital Status
Partnered
Single
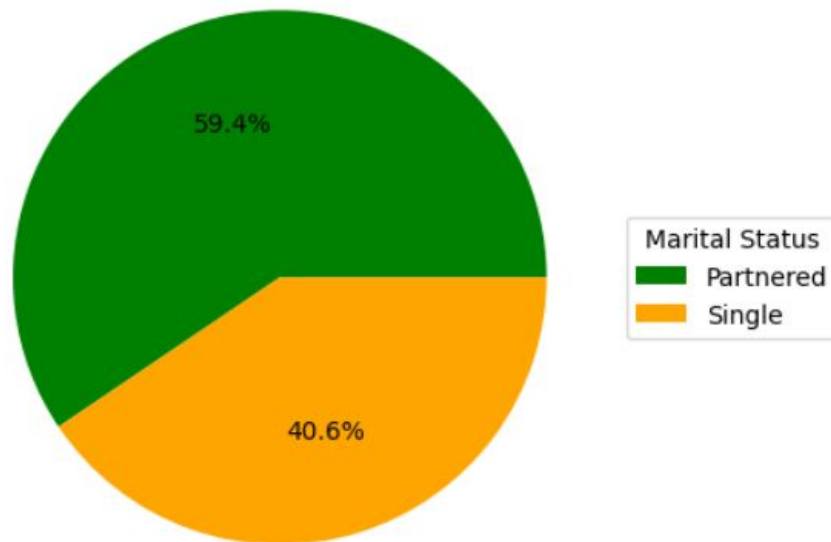
3. Customer segmentation

Distribution of Numerics with Respect to Model Type (Product)
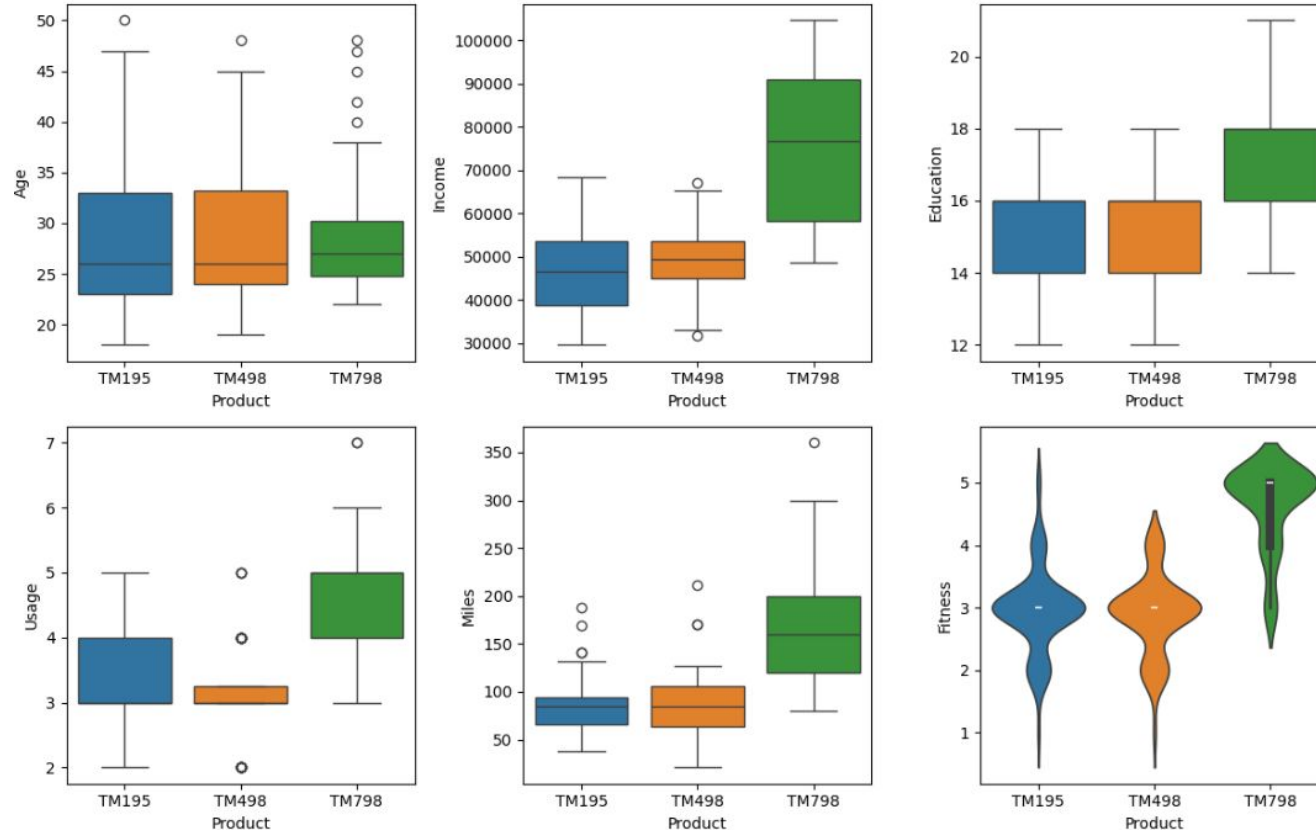
To segment the customer base, let's look at the distribution of numeric data.

TM798 is clearly very different across all features but age!

Do we have two groups of customers?

Customer Segmentation by Numeric Distributions' Correlations

Correlation scale:
- Medium   (0.3-0.5)
- Strong   (0.5-1)

All relationships other than that with age are statistically significant, with threshold p<0.01 (Appendix)

Age shows no correlation with model type.

Treadmill 195 and 498 show similar levels of moderate negative correlation with features

Treadmill 798 is positively correlated with almost all other features and most correlated with fitness at 0.73

Point Biserial Correlation of numeric features With Model Type

	Age	Education	Usage	Fitness	Income	Miles
TM195	-0.031	-0.3	-0.3	-0.33	-0.4	-0.35
TM498	0.011	-0.2	-0.25	-0.3	-0.2	-0.21
TM798	0.024	0.58	0.65	0.73	0.71	0.66

Strong positive correlation

Moderate negative correlation

Customer Segmentation by Means
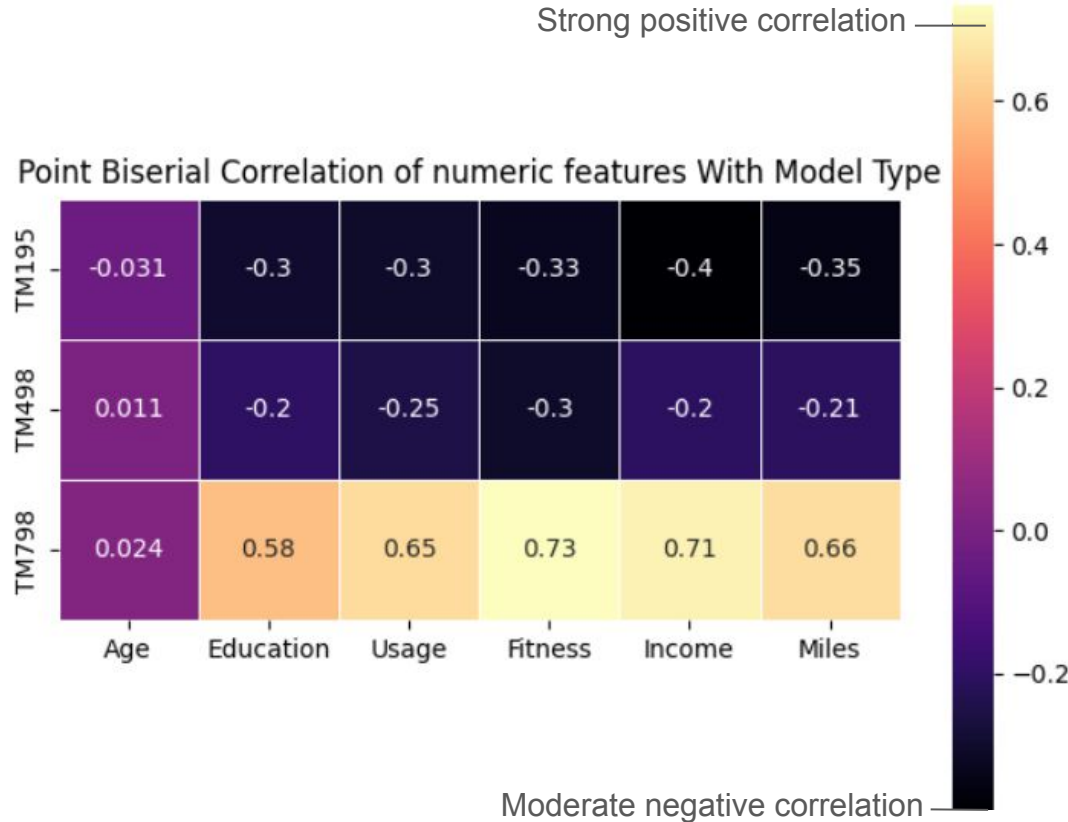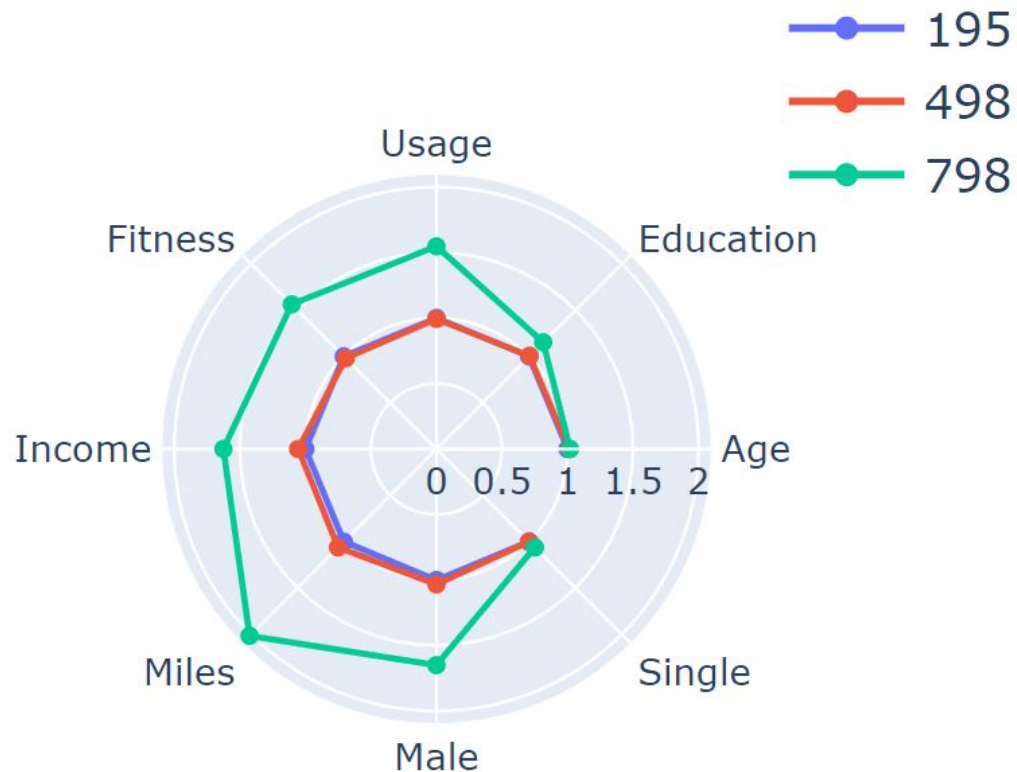
Taking the means of every feature, grouped by model type and scaling by treadmill 195.

We see that treadmill 498 and 195 are overlapping entirely: nearly inseparable, by means.

While 798 has far greater magnitude of mean across most features.

Insights Summary

Treadmills 195 and 498

Treadmill 195 is the most popular model, with usage (mileage and fitness level) of this model being suggestive of where beginners gravitate to, suggesting propositioning as an entry level product would be successful.

TM195 and TM498 share a majority of their customer base
- Potentially revise product
  lineup

Treadmill 798

Treadmill 798 Users tend to have higher income, skew more male, claim to be fitter, will use their treadmill more and run further.
 - Position as experienced runner's
   treadmill
- Scope to increase appeal
  amongst females

Unique customer base.

All Models

Across all models, customer base tends to sit between 25 and 35; Using social media platforms (influencers/Athletes) to target these buyers as they are majority users

More partnered people are buying treadmills than the national average

Recommendations

Treadmills 195 and 498

Focus marketing on 195 and 498 due to their popularity, brand as entry level and accessibility.

Drop 498 focus marketing on the more successful product, that appeals to the same type of customer.
 - *Further Research needed (extensions)*

Treadmill 798

Market 798 as a premium product, with a higher price, since users are of higher income.

Market 798 as for experienced runners/athletes
 - Try to get 195s to upgrade
 - Advertising at events, e.g. London marathon/ sponsoring athletes

Have 798 advertising feature female athletes
 - Expand market

All Models

Use social media platforms (influencers/athletes) to target young majority of users.

Try and have some advertising for older people -Expand market.

Find a way to advertise to couples, since we see more partnered people in the data.

Extensions

<u>Data Requests:</u>

Larger dataset - not enough to state these findings with certainty

Data on treadmill features - identify unique features of models determining whether all models are required.

Data on profit cost revenue - help us decide a business strategy.

<u>Proposed Further Analysis:</u>

Cluster analysis - Use the extra data to truly decide the number of and the features of unique customer groups.

Optimum business strategy - What combination of models and advertising would be most profitable

Insights Summary

1. TM195 is the most popular model, with usage (mileage and fitness level) of this model being suggestive of where beginners gravitate to, suggesting propositioning as an entry level product would be successful.
2. Treadmill 798 Users tend to have higher income, skew more male, claim to be fitter, will use their treadmill more and run further.
    -Position as experienced runner's treadmill
    -Scope to increase appeal amongst female
3. TM195 and TM498 share a majority of their customer base, whereas TM798 has a unique customer base. Potentially we should revise product lineup.
4. Across all models, customer base tends to sit between 25 and 35; Using social media platforms (influencers/Athletes) to target these buyers as they are majority users
5. More partnered people are buying treadmills than the national average

Recommendations

1. Focus marketing on 195 and 498 due to their popularity, brand as entry level and accessible.

2. Market 798 as a premium product, with a higher price, since users are of higher income.

2b. Market 798 as for experienced runners/athletes

  -Try to get 195s to upgrade

  -Advertising at events, e.g. London marathon/ sponsoring athletes

2c. Have 798 advertising feature female athletes - expand market

3. Drop 498 focus marketing on the more successful product, that appeals to the same type of customer

     Further Research needed - see extensions

4a.Using social media platforms (influencers/athletes) to target relatively young majority of users.

4b. Try and have some advertising for older people -expand market. e.g. can get fit without leaving the house. No hassle fitness.

5. Potentially advertise how partnered people can get fit together, since we see more partnered people in the data.

6.Direct advertising according to time of year.

     -Lower models for New years resolutions

     -while higher models for the summer align with training period for the next London marathon

     -Employ Telmar TGI to optimise advertising.

7. References

Inspiration:

Obrunet's analysis of the same dataset
@https://obrunet.github.io/data%20science/cardio/

ExternalStats:
ONS
@https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/populationestimatesbymaritalstatusandlivingarrangements/2022#:~:text=Married%20or%20civil%20partnered%20remained,this%20has%20fallen%20below%2050.0%25

Images:

Runner - "Designed by starline / Freepik"

Github:

https://github.com/AJones545/CS-DA-Projects.git

Data Description

Survey completed by customers upon purchasing treadmills

Features:

Product - Model type

Age - Customer age

Education - no. years in Education

Gender - Customer Gender

Martial Status - marital status

Income - Customer Salary

Fitness - Self Assessed fitness level

Usage - no. times they expect to Use treadmill per week

Miles - no. miles they expect to run per week

Proposed analysis:
Finding relationships between the model type and the other data - segmenting the market.
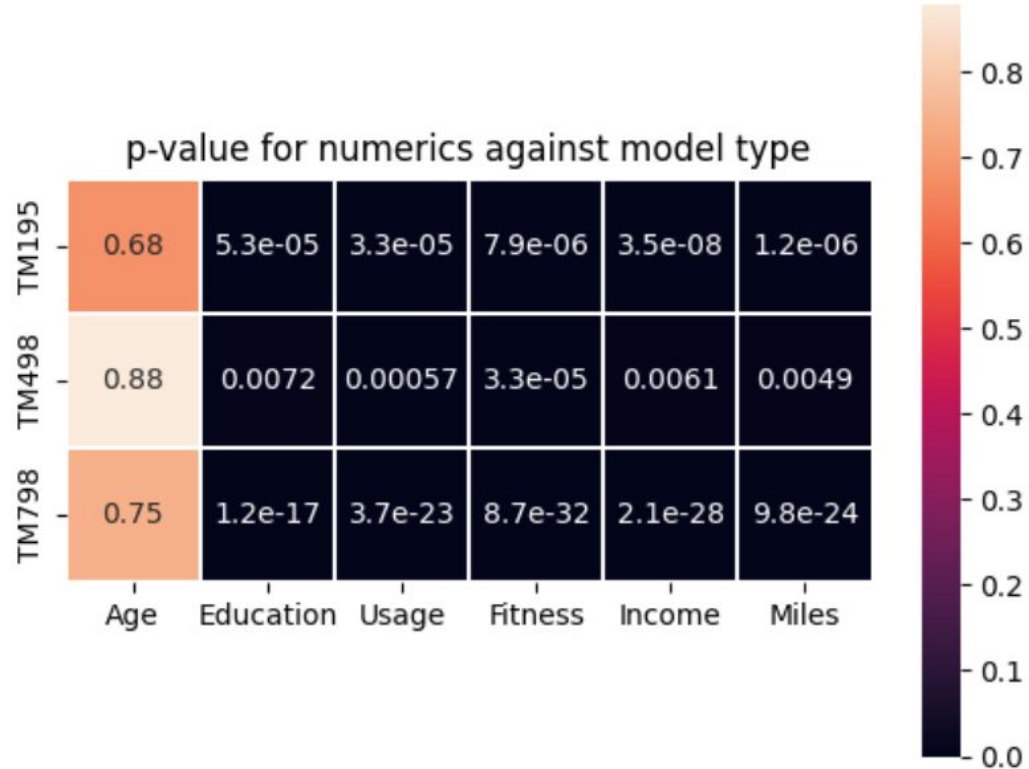Such that advertising can be directed in a particular fashion:

Bonus i - P-values for numerics relationship with model types
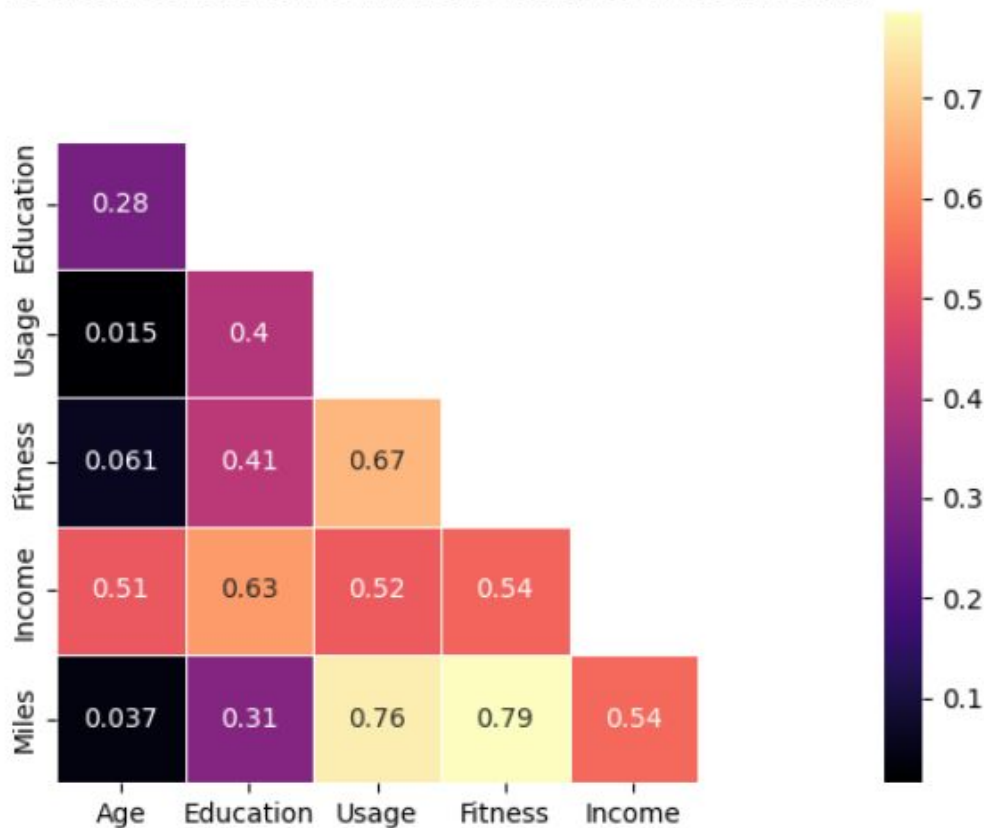

Pearson's correlation -
- Medium (0.3-0.5)
- Strong   (0.5-1)

Strongest correlation is self explanatory - miles/fitness/usage

Interestingly Income is well correlated with all other traits.

Pearson Correlation of numeric features wrt each other

P-values - statistically significant if below 0.05

All bellow 0.05 by a good distance; other than age with self-reported usage, fitness and miles.

Quite interesting as our data doesn't what I expected: age negatively correlated with fitness.

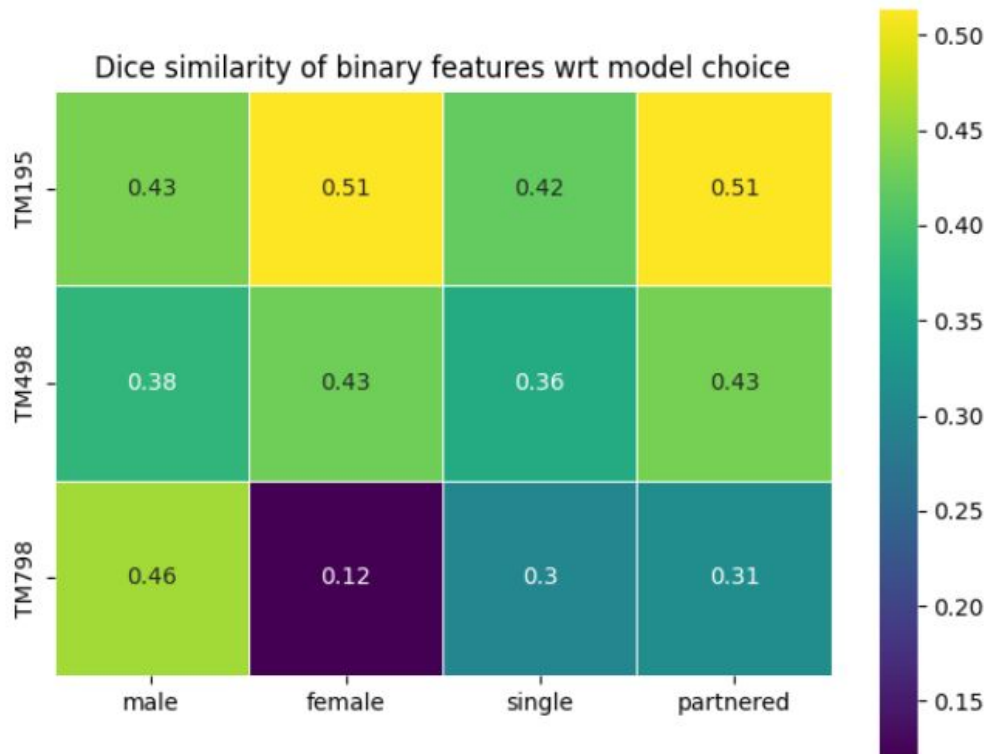p-value for numerics against model type
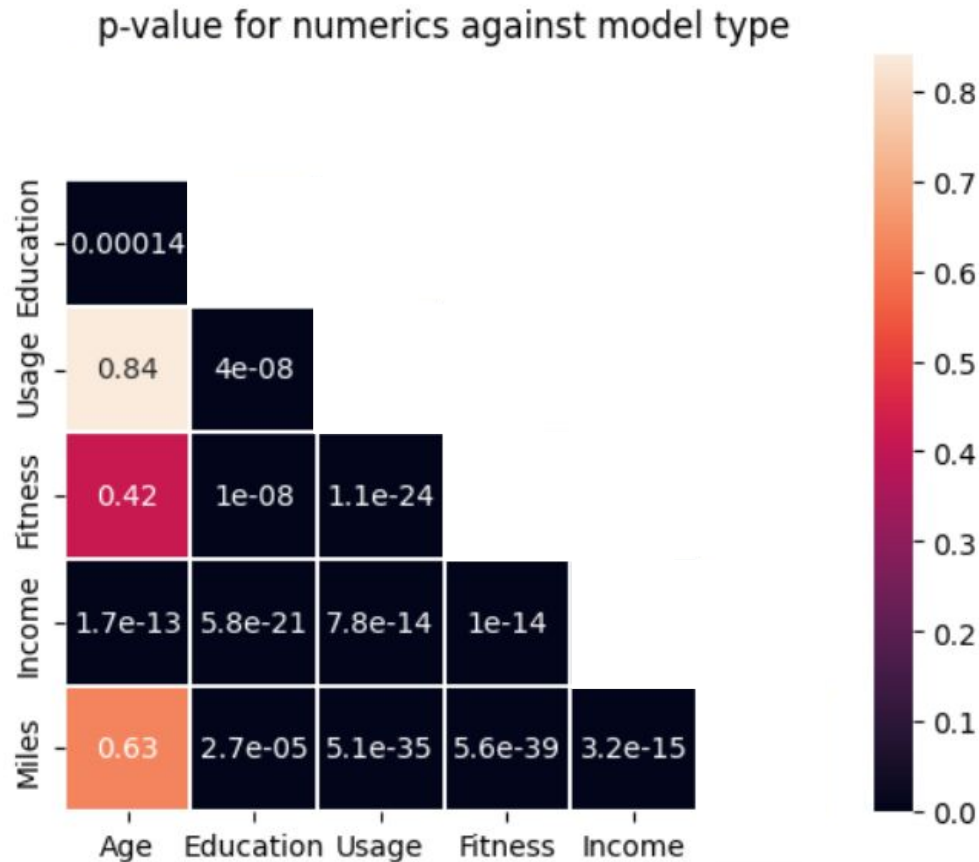
Dice similarity:

- low-moderate (0.20 to 0.39)
- moderate (0.40 to 0.59)

Lowest similarity between females and tm798 @0.12

Male is similar with 798 as expected. @0.46

Surprisingly female and partnered are have the strongest similarity scores @0.51; due to relative size

Dice similarity of binary features wrt model choice

|	male	female	single	partnered
TM195	0.43	0.51	0.42	0.51
TM498	0.38	0.43	0.36	0.43
TM798	0.46	0.12	0.3	0.31

Bonus iv - Marital Status Distribution by Treadmill Model

Office for National Statistics - in the uk in 2022, 49.4% of people were married.

However in our data 59.4% are married, and all models are bought by mostly (~60%) married people

suggests singles are less interested in treadmills..
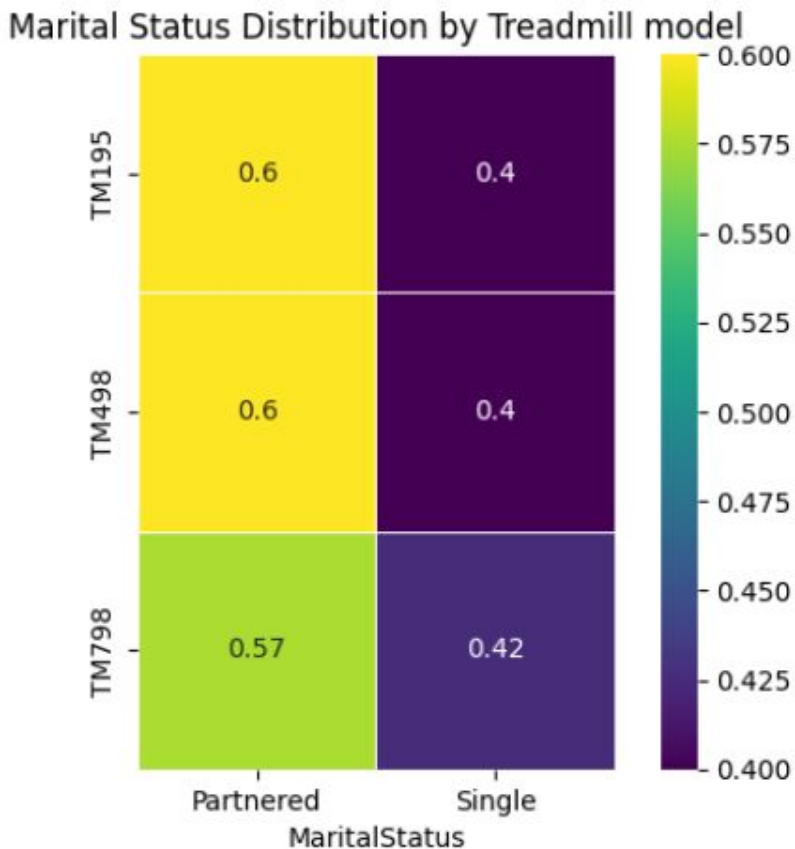
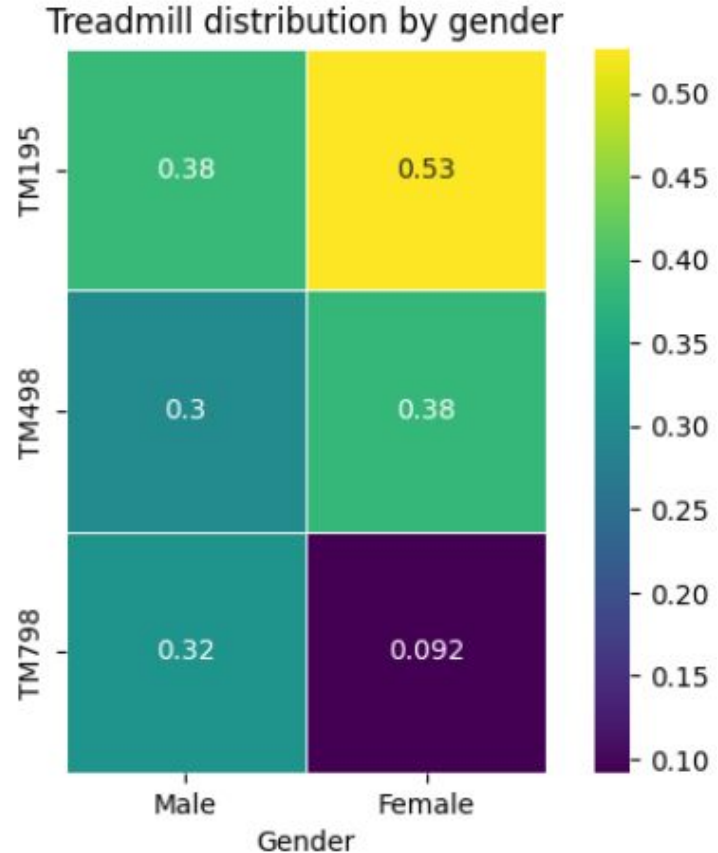*Caveat: small sample size*

Marital Status Distribution by Treadmill model

Men distribute evenly across the treadmill types.

On the other hand, only ~10% of women are buying the TM798, while the excess are buying 195s.

Treadmill distribution by gender

Beginning	Middle	End
Problem statement: To identify the profile of the typical customer for each treadmill and whether there are differences across the product lines.	**Key plot movements:** TM798 tend to be more educated Have higher incomes and use their treadmill more?? Is TM798 the most expensive /premium treadmill? While the other treadmills are similar in those features	**Most important message to land:** TM798 significantly different customers Pricing of the TM798 should be set highest to reflect higher income/more dedicated user base and marketed as most premium product in range.
Context/ Why this is important: To improve targeted marketing of each treadmill and increase sales of treadmills by according to trends in customer data? shared characteristics of the customers who buy the same type of treadmill/ product. Want to be able to target appropriate demographic to maximise sales of each treadmill type	**Pivotal discovery/ story climax resulting in a new challenge:** 18-29 yr olds make up the majority of treadmill buyers/users. Partnered individuals are more likely to buy a treadmill - are their partners also using the treadmill? TM798 is favoured by men and endurance runners	**Resolution - where outcome is progress:** Focus group to find out why other demographics aren't interested?
Hypothesis: When matching treadmills with the right customer type increased	**Reframing of a problem statement:** Advertise TM798 towards higher educated	**Tangible action:** Direct advertising according to the

Do we want to organise a call for practise???

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INVITE SENT from smconde@hotmail.com