FIRST NAME-SAI SUMA

LAST NAME -PODILA

PSID- 2149229

Report on Cardio Good Fitness Data

Here is the analysis by the Adright Company which has a market research team on the different products offered by the CardioGood Fitness Company. CardioGood Fitness offers 3 different treadmills products on the market with the name TM195, TM498 and TM798.The Adright Company's report on the treadmill's projects offered by the CardioGood Company helps us to analyse the type of people that we have to target based on the type of products sold to them.

All the 3 machines have different features with TM195 being the most affordable of the lot with the least features followed by TM498 which has a larger size than that of TM195 but also has additional features like heart rate tracker and incline running features and at last we have the most expensive one of the lots i.e., TM798 which has the most features and is considered a premium machine amongst the 3 treadmills offered by CardioGood Company.

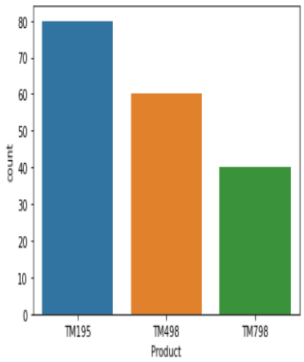
The factors that have been taken into consideration while the data collection process is

- Gender: Male or Female
- Age in years
- Education in years
- Relationship Status: Single or Partnered
- Annual household income ($)
- Usage (Average number of times the customer plans to use the treadmill each week)
- Miles (Average number of miles the customer expects to walk/run each week)
- Fitness (self-rated fitness on a 1 - 5 scale, where 1 means bad shape and 5 means best shape)

DATA ANALYSIS

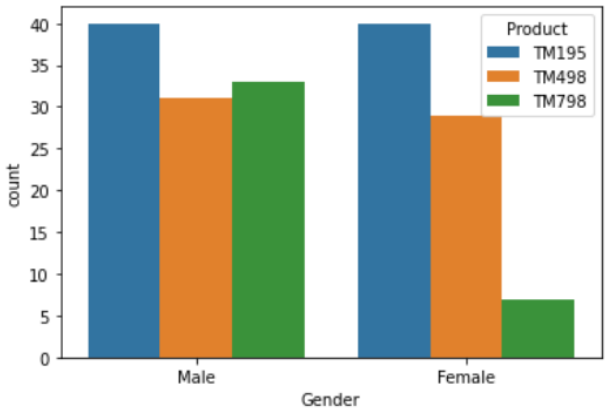
Here We will provide an analysis of the data that has been collected by the firm and give insights from them that can be further used by the firm to properly set up the treadmills for the correct markets and penetrate the market further.

Checking the frequency of the type of product sold



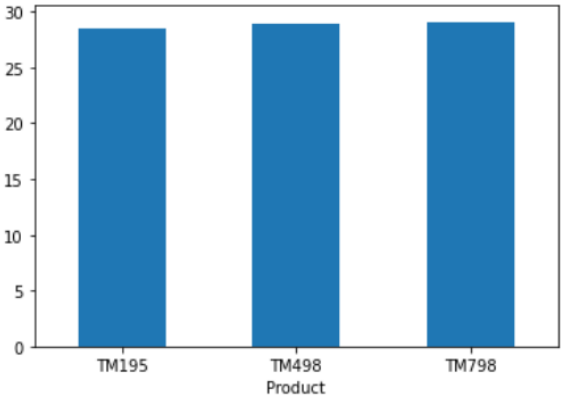
Analysis: From the data we can see theTM195 has the highest customers count of 80 followed by TM498 customer count 60 and TM798 customer count of 40. So, we can interpret the TM195 which is the cheapest of the 3 is sold the most.

Preference of the type of product based on Gender



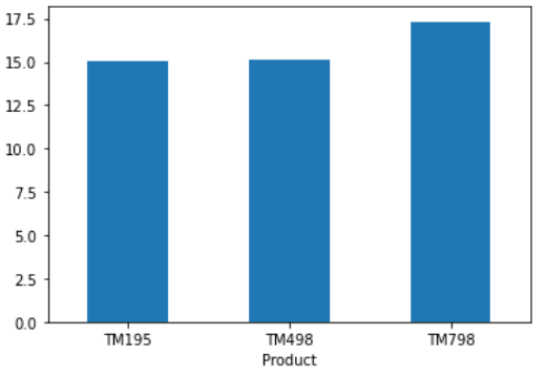
Analysis: From the data we can see we can see that TM195 and TM498 have almost similar users in both gender but in the case of TM798 males prefer it more than females. So, in case of TM798 the target customers are males rather than females while the other 2 products are equally preferred regardless of the gender.

Age group of the customer who buy the Treadmills



Analysis: From the data we can see we can mean age of people across different genders using the products of all 3 categories is around 28 years while the median age for the same is 26 years. So, we can conclude that the young people are the target customers int eh range of 25-30 years and they have a specific focus on cardio fitness.

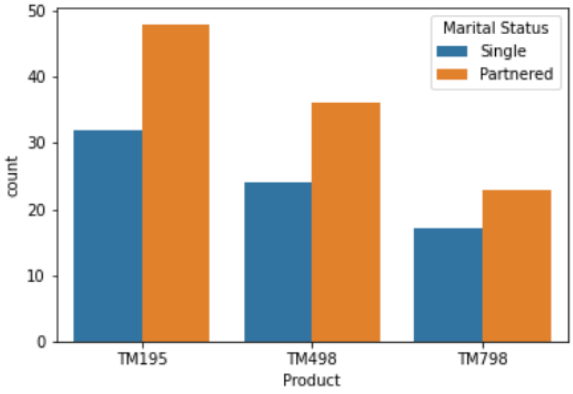
Education level of the people who buy the Treadmills



Analysis: From the data we can see we can that the people using TM798 have the highest level of education followed by both the two products. We further also have the data stating the CI with 95% for all the 3 treadmills on the market and we can see that a wide range of people from different education levels are interested in treadmills.

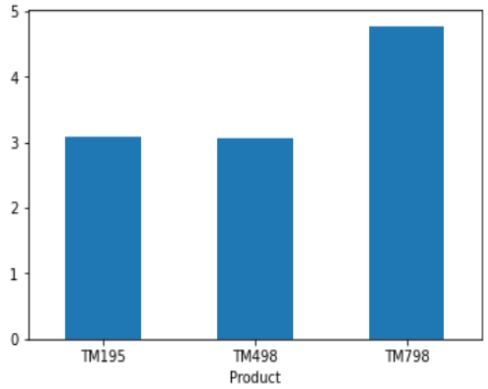
Product Type	Lower CI	Upper CI
TM195	12.6	17.47
TM498	12.67	17.56
TM798	14.04	20.6

Frequency of marital status based of on the product



Analysis: From the data we can see that the people who have a partner are more interested in buying the machines and they are the target customer for us. This can be interpreted as the Partnered people are contributing to the most of the sales of the treadmills.

Usage level of the customers who purchased the product

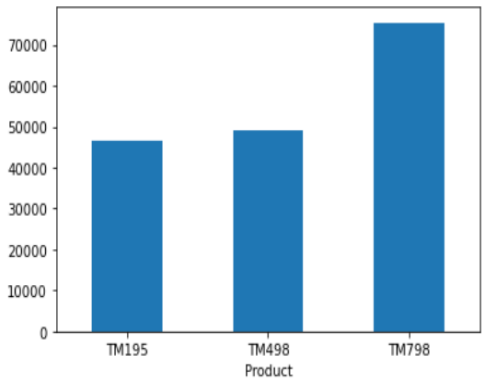


Analysis: From the data we can see that the people using TM798 have the highest level of usage compared to the rest and also from the product user's additional numerical analysis we can see the females have a bit higher mean usage then males. So, we can target the

Females. Additionally, we have the CI at 95% for all the 3 products and we can see that the customer of usage ranges from low users to high users in each week. With TM798 serving the highest users.

Product Type	Lower CI	Upper CI
TM195	1.52	4.6
TM498	1.467232	4.666102
TM798	2.881015	6.668985

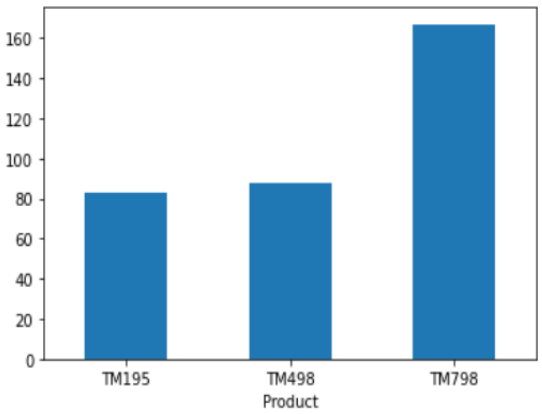
Income of the people who purchase the product



Analysis: From the data we can see the people owning TM798 have a higher income than the owners of the other two products so we can say that TM798 is a premium product. And higher income group can afford that.
We also have a CI analysis at the 95% to see the range of income groups that fall onto the specific product range with TM798 followed by TM498 And TM195.We can bifurcate the high spenders from the low using this.

Product Type	Lower CI	Upper CI
TM195	28266.46	64569.59
TM498	31665.67	66281.63
TM798	38429.9	112453.2

Miles of the people who purchase the product



Analysis: From the data we can see the product owners of TM798 are having more miles even with the lowest sales it shows that the people are more athletic and into cardio than the people purchasing the other two products. It can also be seen that the same product has the highest usage as well.
We also have CI at 95% for all the products where we can clearly see and analyse that the customers with TM798 are having the most miles by huge difference.

Product Type	Lower CI	Upper CI
TM195	25.0393	140.5357
TM498	21.40706	154.4596
TM798	46.76691	287.0331

TREADMILL 1 (TM195)

Data Description

Column Name	mean	std	min	25%	75%	max
Age	28.55	7.221452	18	23	33	50
Education	15.0375	1.216383	12	14	16	18
Usage	3.0875	0.782624	2	3	4	5
Fitness	2.9625	0.66454	1	3	3	5
Income	46418.03	9075.783	29562	38658	53439	68220
Miles	82.7875	28.8741	38	66	94	188

Here is a brief data description of the dataset of TM195 we can see that the people using the product are around 28 yrs. old and have a mean income of 46000.Also the number of miles on average on the machine are 82 and the usage of the machine is like 50 % each week with is 3 days a week.

Confidence Intervals

Variable	CI	Lower	Upper	Variable	CI	Lower	Upper
Income	70	45366.79	47469.26	Education	70	14.89661	15.17839
Income	80	45117.18	47718.87	Education	80	14.86315	15.21185
Income	85	44956.85	47879.2	Education	85	14.84167	15.23333
Income	90	44748.84	48087.21	Education	90	14.81379	15.26121

Income	95	44429.21	48406.84	Education	95	14.77095	15.30405
Income	98	44057.82	48778.23	Education	98	14.72117	15.35383
Income	99	43804.15	49031.9	Education	99	14.68717	15.38783

Above we have a analysis report of the Confidence intervals for education and income, here we can clearly see that the mean found in the data description is well within the range of the different intervals that have been computed by us.

Hypothesis Testing

1.Mean age of people purchasing TM195 is 28 years

The hypothesis is:

- H0: mean people purchasing = 28
- H1: mean people purchasing! = 28

Analysis: P - value = 0.5827073041634316, As p values is more than 0.05 we can fail to rej ect null hypothesis so the mean age of the people purchasing TM195 is = 28

2.Mean usage of TM195 is 3 days/week

The hypothesis tests are: H0: Mean people usage <= 3
H1: Mean people usage > 3

Analysis: P - value = 0.32036371526, As p values is more than 0.05 we can fail to reject null hypothesis so the mean age of the people purchasing TM195 is <= 3.

3.Mean Education of people purchasing machine is 15

The hypothesis is:

- H0: mean people Education <= 15
- H1: mean people Education > 15

Analysis: P - value = 4.200577434456929e-06, As p values is less than 0.05, we can reje ct null hypothesis so the mean Education of the people purchasing product is greater than 15

4.Mean income of people purchasing TM798 is 75000

The hypothesis is:

- H0: mean people income = 75000
- H1: mean people income! = 75000

Analysis: P - value = 0.8808224787915397, As the p value is more then 0.05 so we cannot reject the null hypothesis and the mean income of the people owning the product TM798 is 75000

5.Mean miles of people purchasing TM195 is 82 miles

The hypothesis is:

- H0: mean people Miles = 82
- H1: mean people Miles! = 82

Analysis: P - value = 0.8079079291894233, As the p value is more then 0.05 so we cannot reject the null hypothesis and the mean miles of the people owning the product TM195 is 82

6.Is there any relationship between the product and the gender

The hypothesis is:

- H0: Gender and product are independent
- H1: Gender and product are dependent

Analysis: P - value = 0. 0.0015617972833158714, Here as we can see that the p value is 0. 0015 which is less than 0.05 so we reject the null hypothesis that means that there is a significant rel ationship among the Product and Gender

7.Mean Education is same across all the Products

The hypothesis is:

- H0: The average of all is same
- H1: The average of one of them is different than the others

Analysis: P - value = 1.3951292571863684e-16, As the p value is less than 0.05 so we reje ct the null hypothesis so one of the 3 products has a different education mean.

CONCLUSION

From the above analysis we can clearly see that TM798 is our best product out there which is not only premium but has the most usage as well and attracts a lot of high-end clienteles too.

While we have the other products too but the users are not using the product like TM798 so we might need to have a look into it to maybe improve the customer experience to make our customers more interested into the cardo on treadmill.

We have also seen a keen interest of women and partnered people in the treadmills so we can also take out some ads out on Instagram and other social media platforms and even make use of the social media influencers to create a trend and awareness on cardio which might also help us boost the sales of the products among the specific category of peoples.

We can even be discount for couples' day occasion as the partnered people have high sales this can help lead increase in sales as well.