TOUR GUIDE

Karthik Thallam

(500188370)

Overview of the Business Problem

* To establish a viable business model by expanding the customer base

* In the previous year, only 18% of the customers purchased the travel package

* To attract the customers by introducing new package offers

* To launch a new 'Wellness Tourism Package'

* Planning to reach out to the customers that are more likely to buy this new package

Best Possible Approach to the Business Problem

In the previous campaign, Company approached random customers to make them purchase their travel package

To develop an AI model that can find potential customers to buy this new package

To find the key insights about the Customers and provide Recommendations

Gender

Male Customers are showing more interest in buying the packages than Female Customers

Hotel Rating

Customers who preferred five-star properties are more likely to purchase the package

Pitch Satisfaction Score

- Customers who gave satisfaction scores of 5 and 3 for the pitch are more likely to purchase the package

- Also, 30% of the customers gave a satisfaction score of 3 for the pitch while 20% of the customers gave a satisfaction score of 5 for the pitch
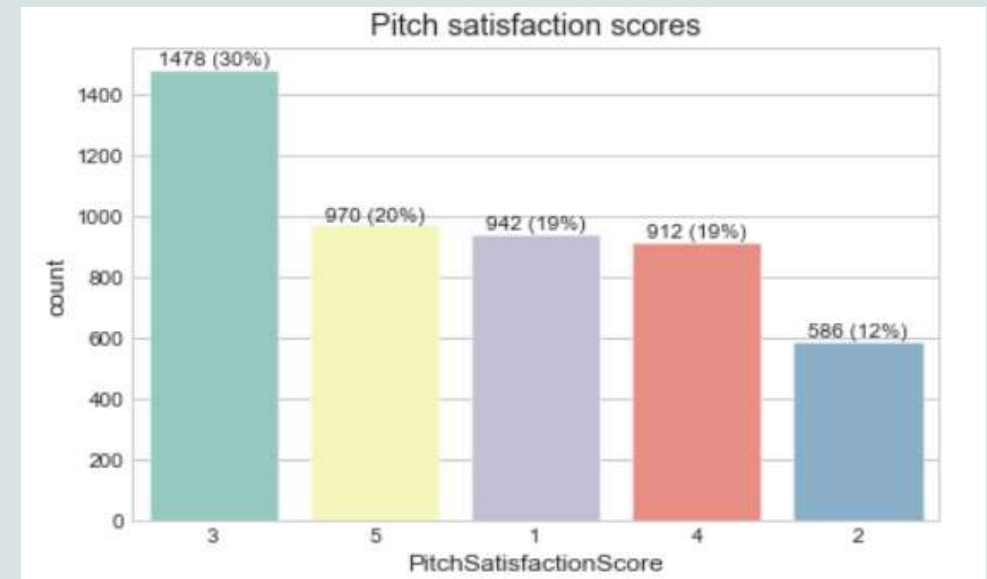
Gross Monthly Income of the Customers

- Customers earning 1k-21k per month have shown great interest in purchasing the package

- Most of the customers with around 67% are earning 21k-41k dollars per month whereas 33% of the customers are earning 1k-21k dollars per month and only 2 customers are having a gross monthly income between 81k-100k dollars
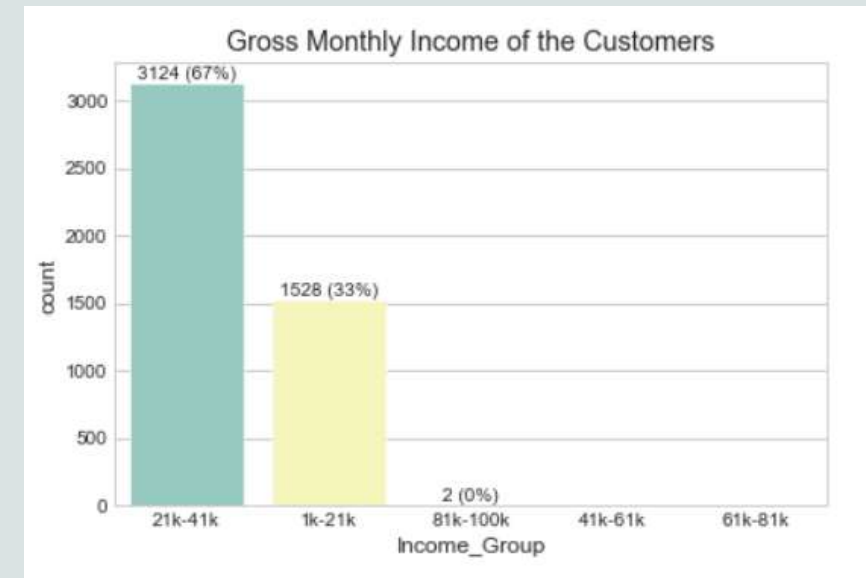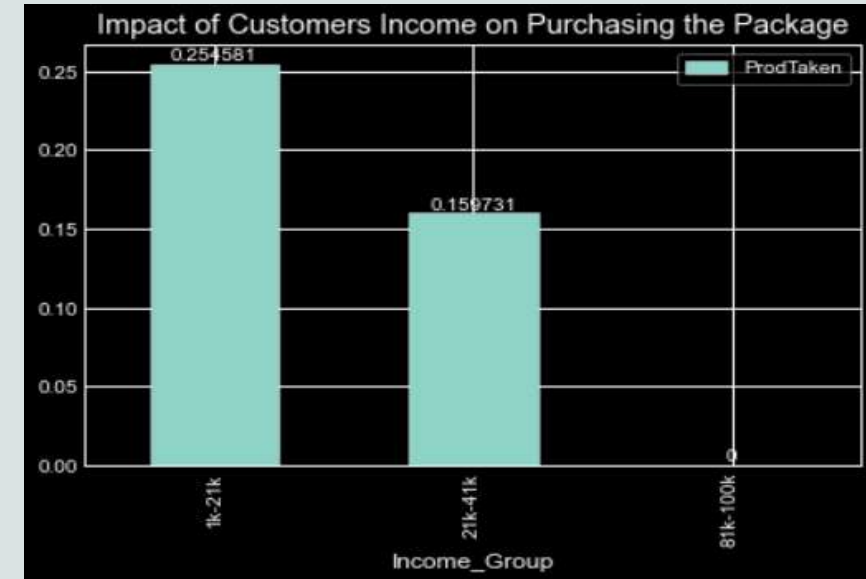
Gross Monthly Income of the Customers

- Almost 68% of the customers falls with in the blue lines having a gross monthly income between 18240 dollars and 29000 dollars.

Measures of Central Tendencies of MonthlyIncome field
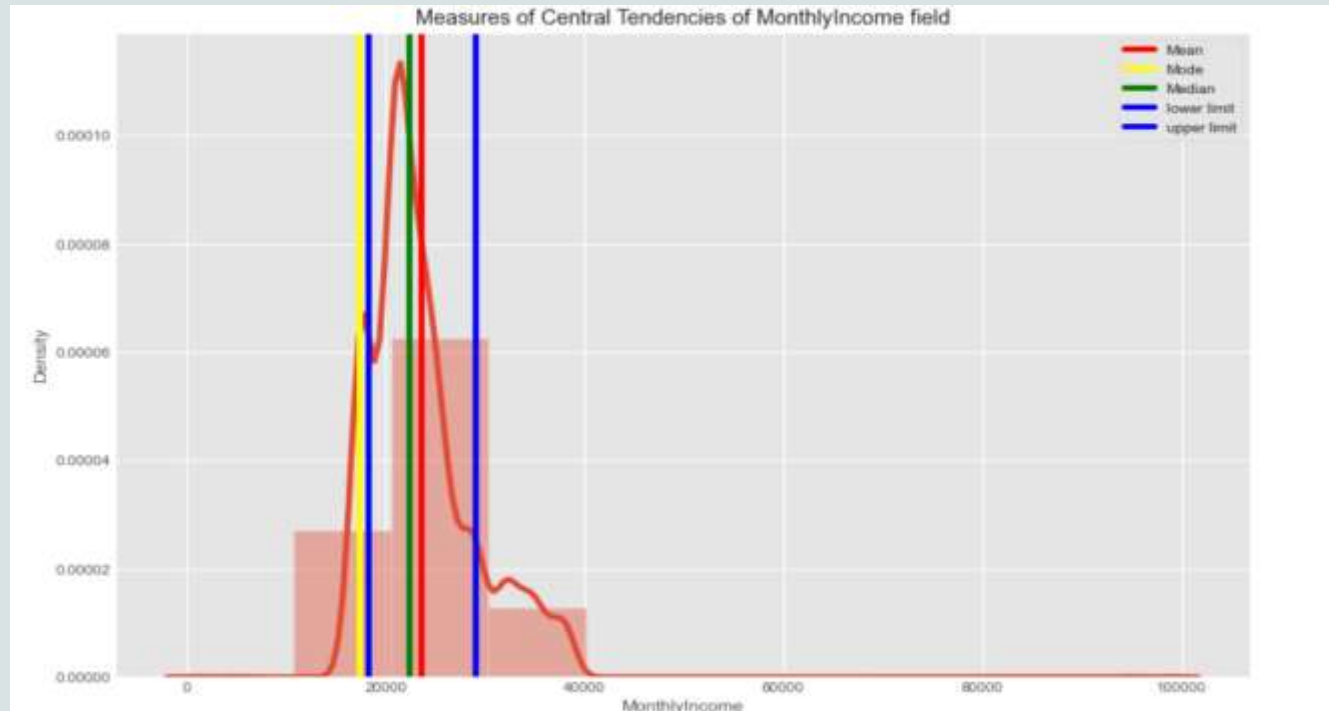
Type of Package

- Customers who were pitched with Basic product type are more likely to purchase the package

- Also, 38% of the customers were pitched with Basic product type by the Salesperson and 35% of the customers were pitched with Deluxe type while 15% of the customers were pitched with Standard product type
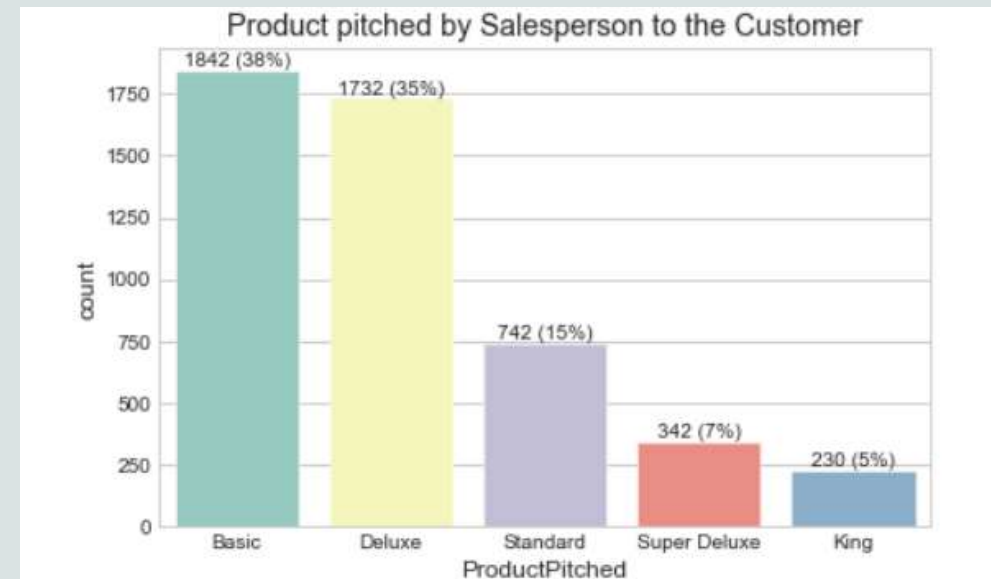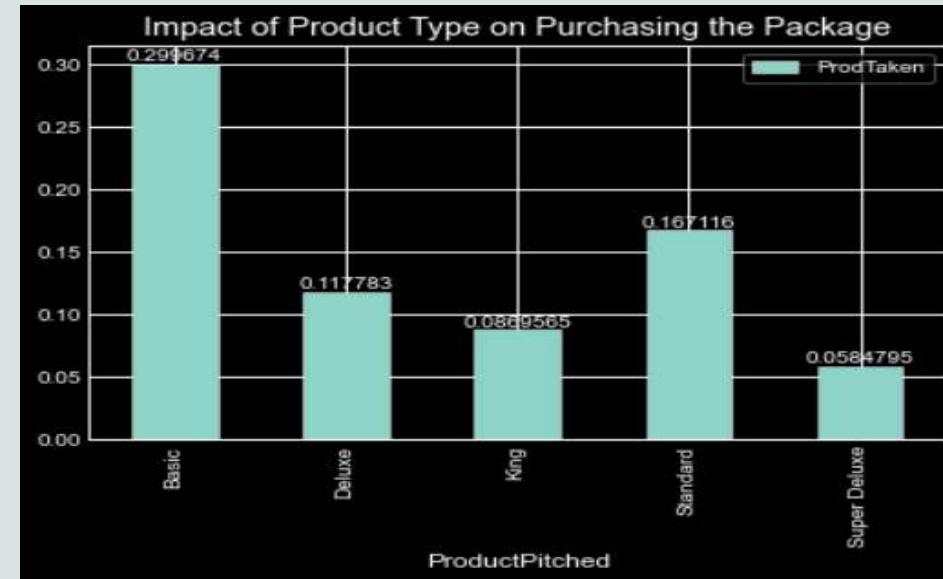
Average No. of Trips per year

- Customers with 19-20 trips per year on an average, are more likely to purchase the package but there is no enough data to support this

- 31% of the customers are completed 2 trips on an average in a year while 23% of the customers completed 3 trips and 13% of the customers completed 1 trip on an average in a year
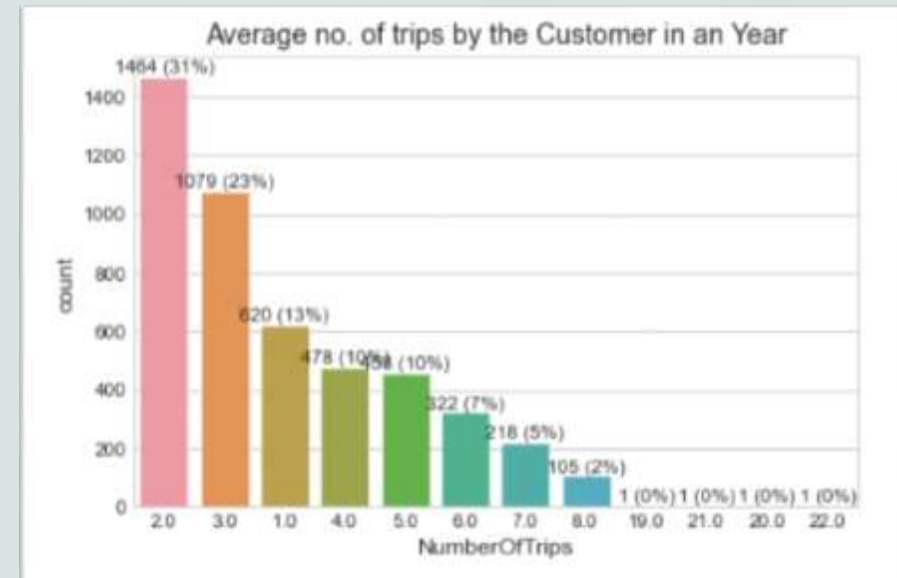
Marital Status

- Customers whose marital status is Single or Unmarried are more likely to purchase the package compared to the Divorced or Married and there is enough data to support this statistic

Impact of Marital Status of the customers on Purchasing the Package


Marital status of the customers
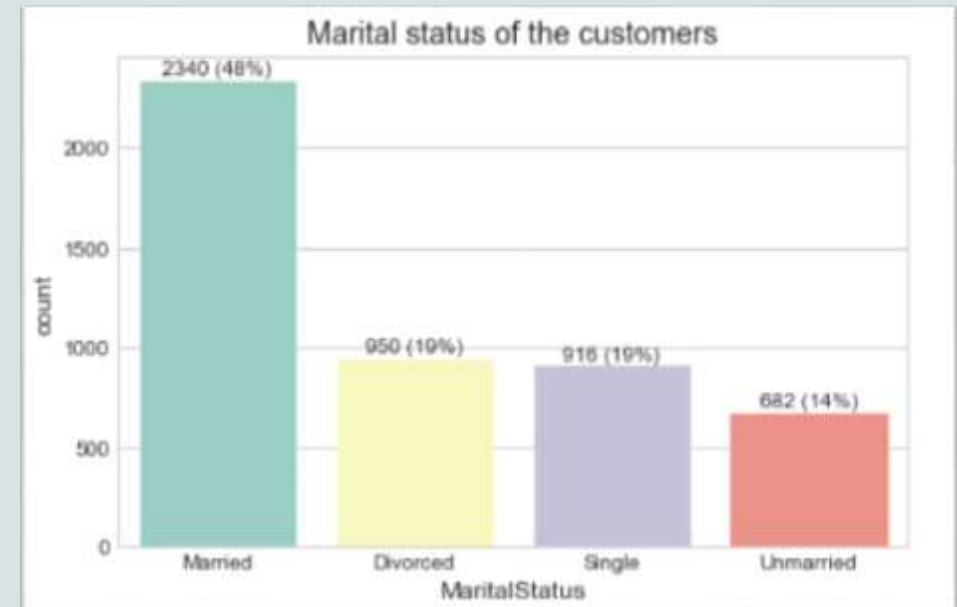
Designation

- 38% of the Customers, working as Executives were highly interested in purchasing the package followed by Senior Managers, Vice Presidents and Managers
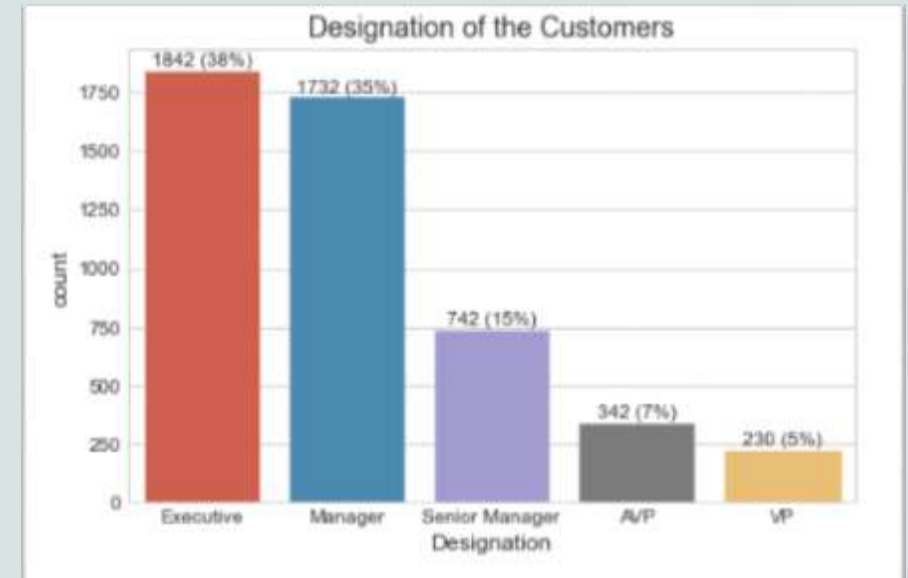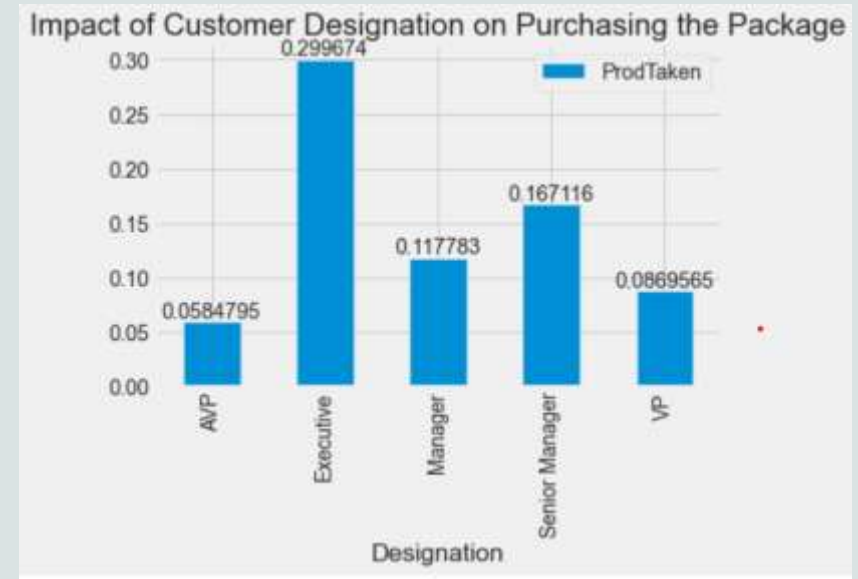
Number of Children

- There is no significant difference on purchasing the package based on Number of children visiting with the customer but 43% of the customers are taking 1 child with them for the trip whereas 22% went to the trip without carrying any child with them

Number of Children visiting with the customer

Impact of Number of Children visiting on Purchasing the Package
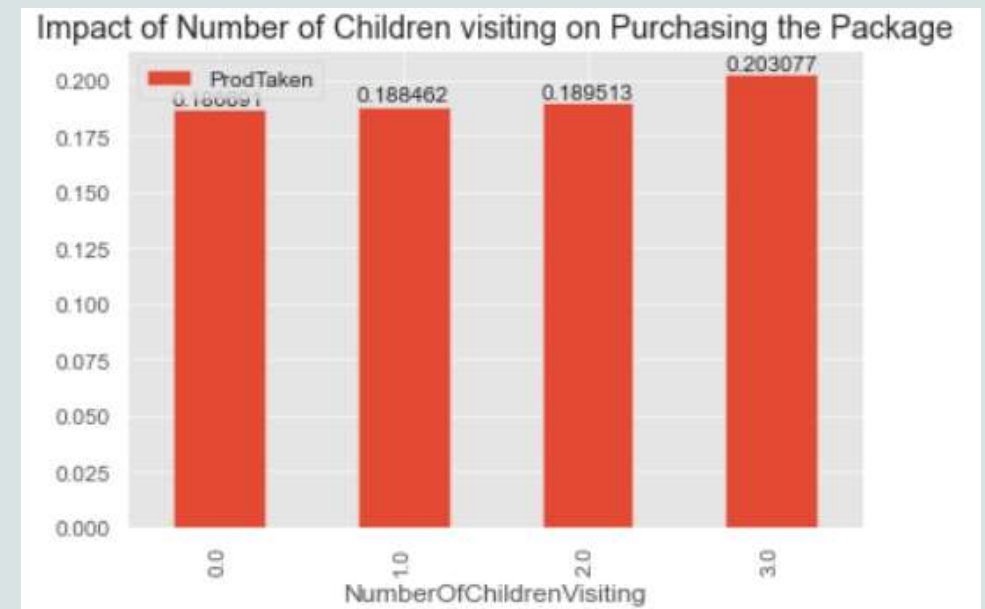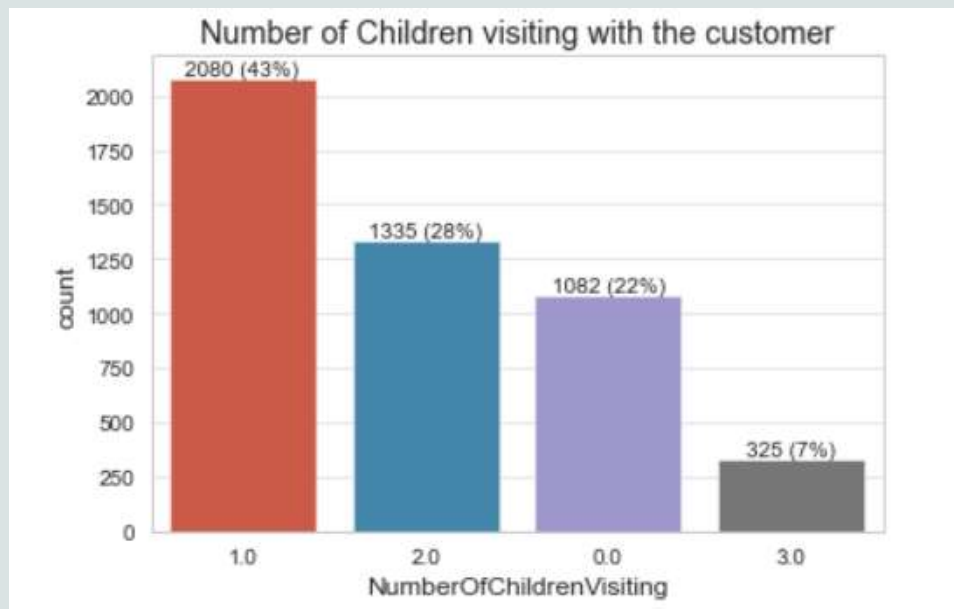
Passport

- 29% of the Customers are having Passports and they are more likely to purchase the package

Customers & Passport

Impact of Customers having Passports on Purchasing the Package
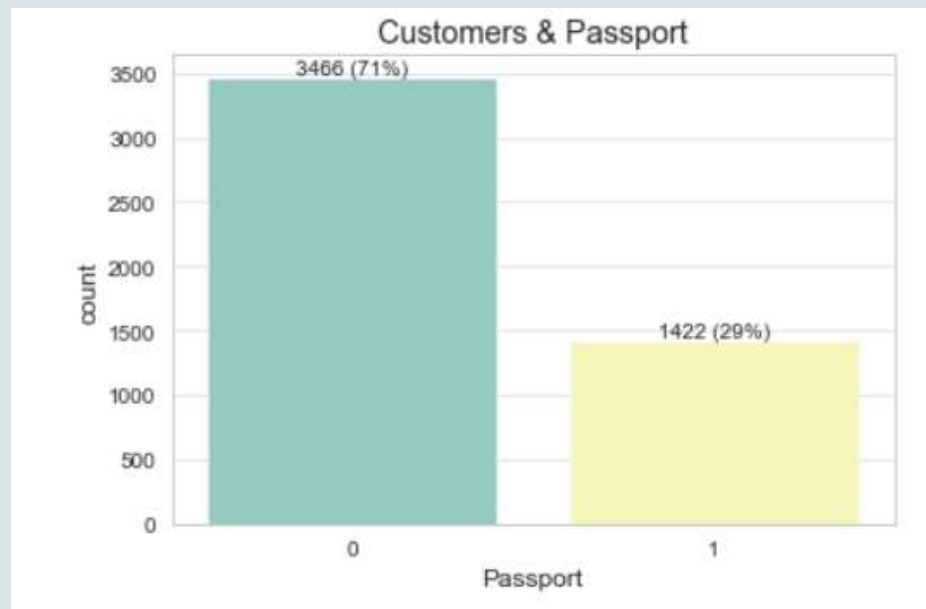
Follow-ups

- The likelihood of purchasing the package seems to be high if there are more no. of follow-ups by the salesperson with the customer

- Average no. of follow-ups made by the salesperson is 4

Impact of Number of Followups on Purchasing the Package

Number of Followups by salesperson with the customer
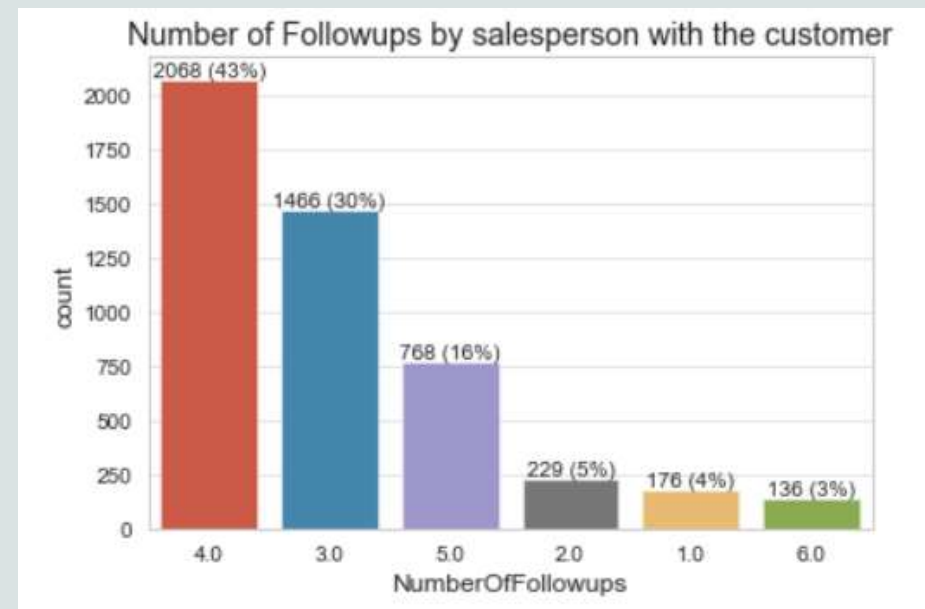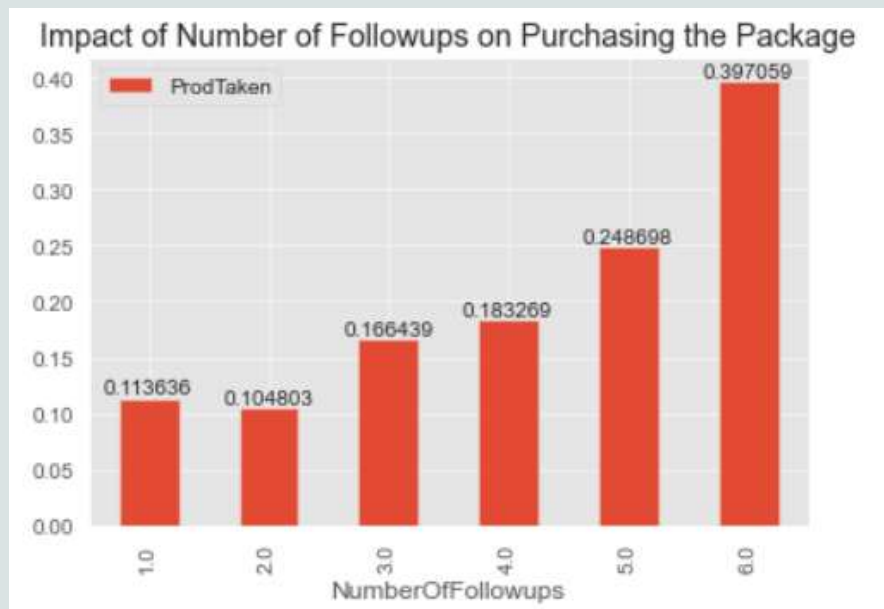
Number of Persons Visiting

- Most of the times, customers who are bringing 2 to 4 people with him for the trip bought the package

- 49% of the customers took 3 people with them for the trip while only 1% of the customers went with 1 person for the trip
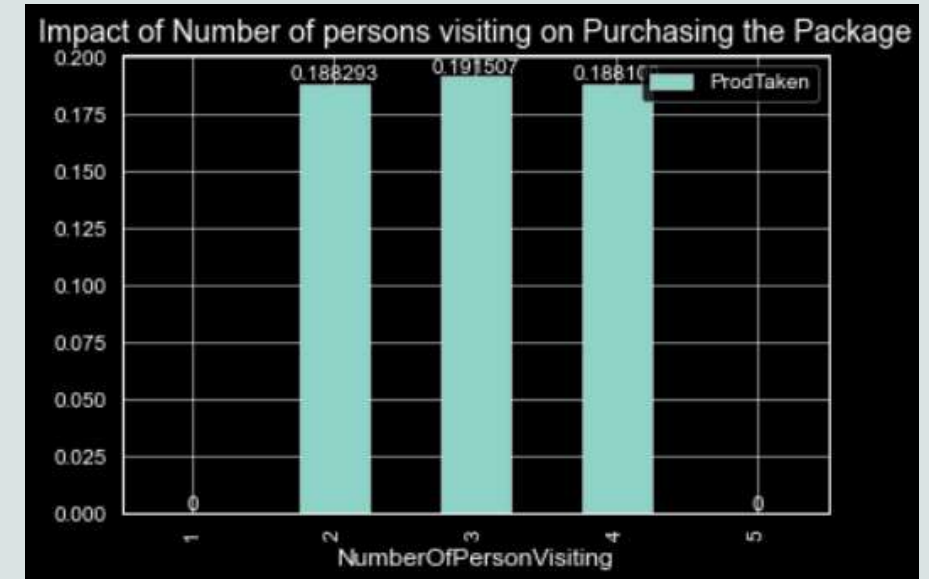
Duration of Pitch

- Customers having a duration of pitch between 16-40 min showed great interest in purchasing the package

- However, customers didn't like the prolonged talks making them to avoid purchasing the package

Measures of Central Tendencies of DurationOfPitch field
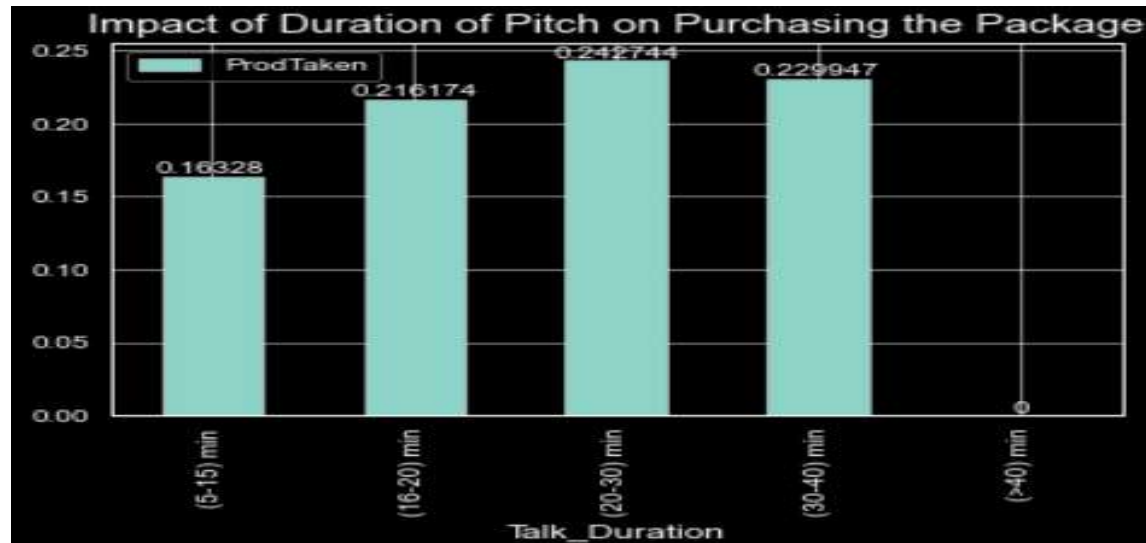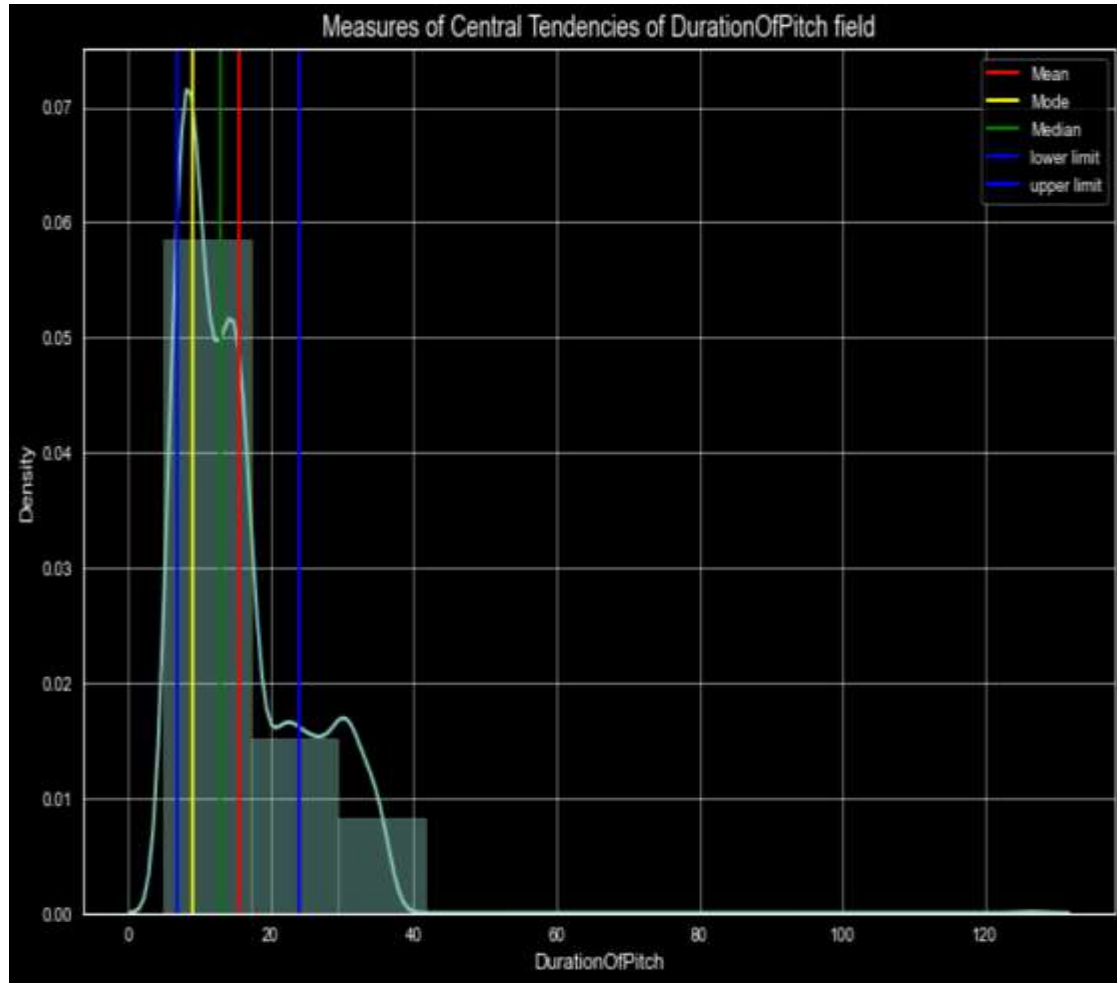
Duration of Pitch

- Almost 68% of the customers falls with in the blue lines and received a pitch of duration between 7 min to 24 min

Impact of Cities on Purchasing the Package
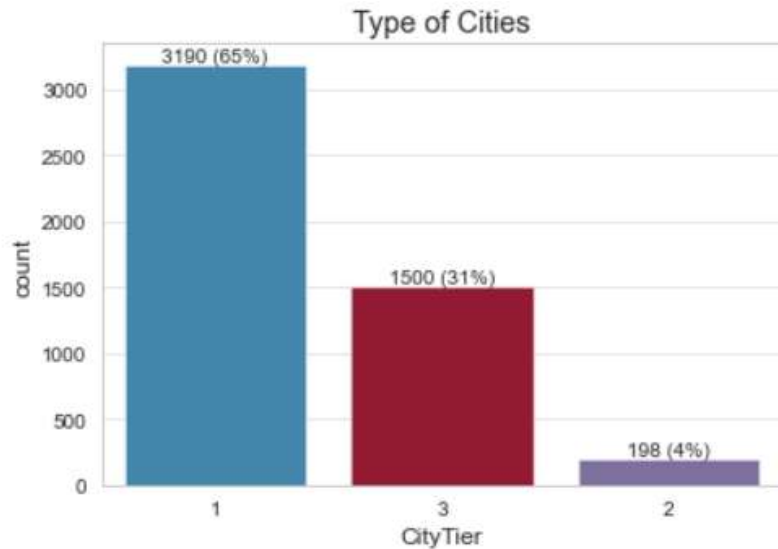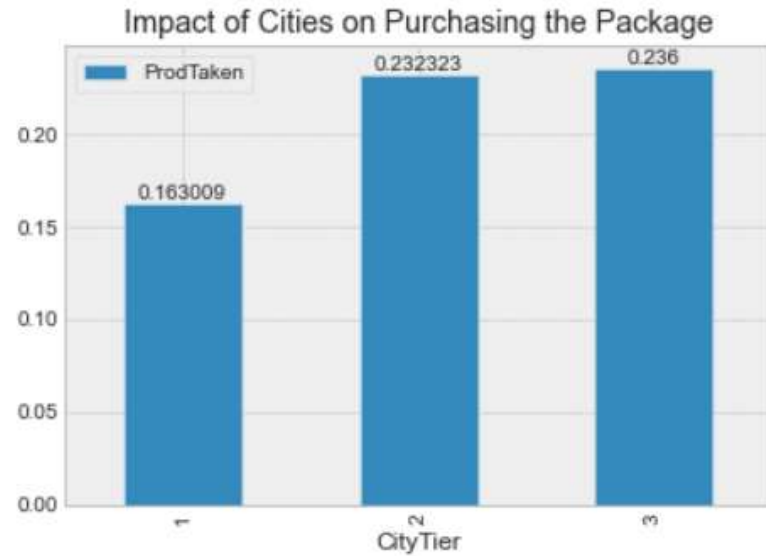
Type of Cities

City Tier

- Customers belonging to the Tier 3 and Tier 2 cities have shown great interest in buying the package

- Moreover, 31% of the customers are from Tier 3 cities while only 4% belong to Tier 2 cities

Type of Contact

- 71% of the customers enquired about the package by themselves whereas 29% of the customers have been approached by the company

- Both contact types have sparked an interest in customers to buy their package. However, customers approached by the company have shown high interest in buying the package
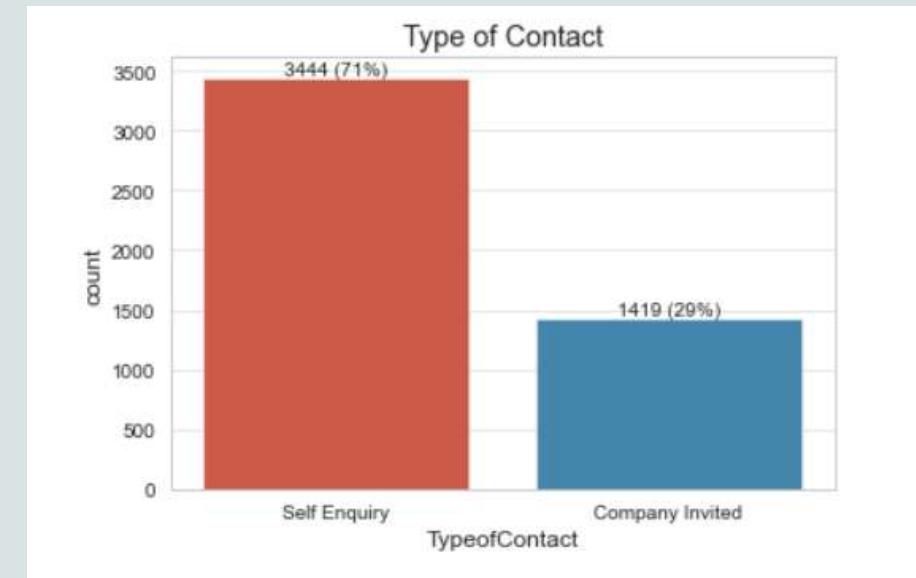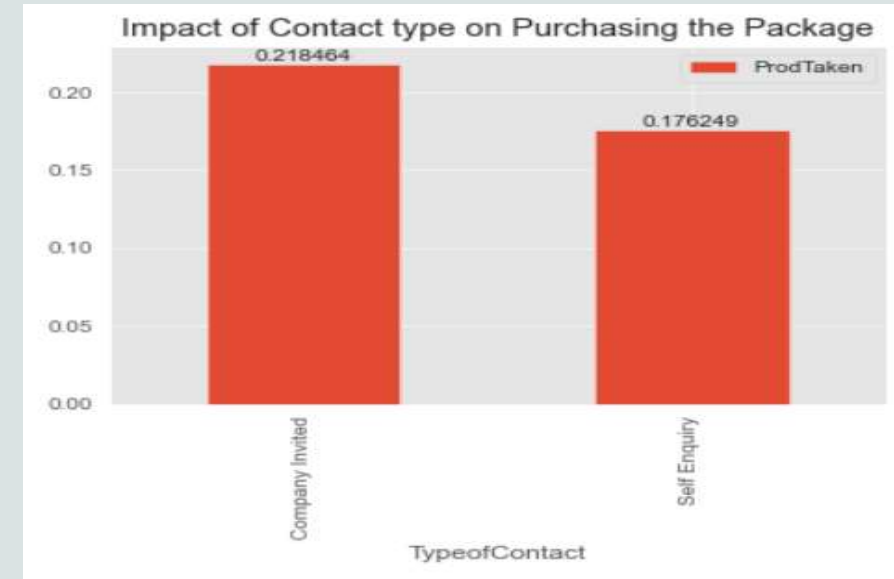
Customer's Age

- Customers aged between 18 years and 25 years have great interest in buying the package followed by 26-30 age group and the least interest is shown by 41-50 age group

Measures of Central Tendencies of Age field
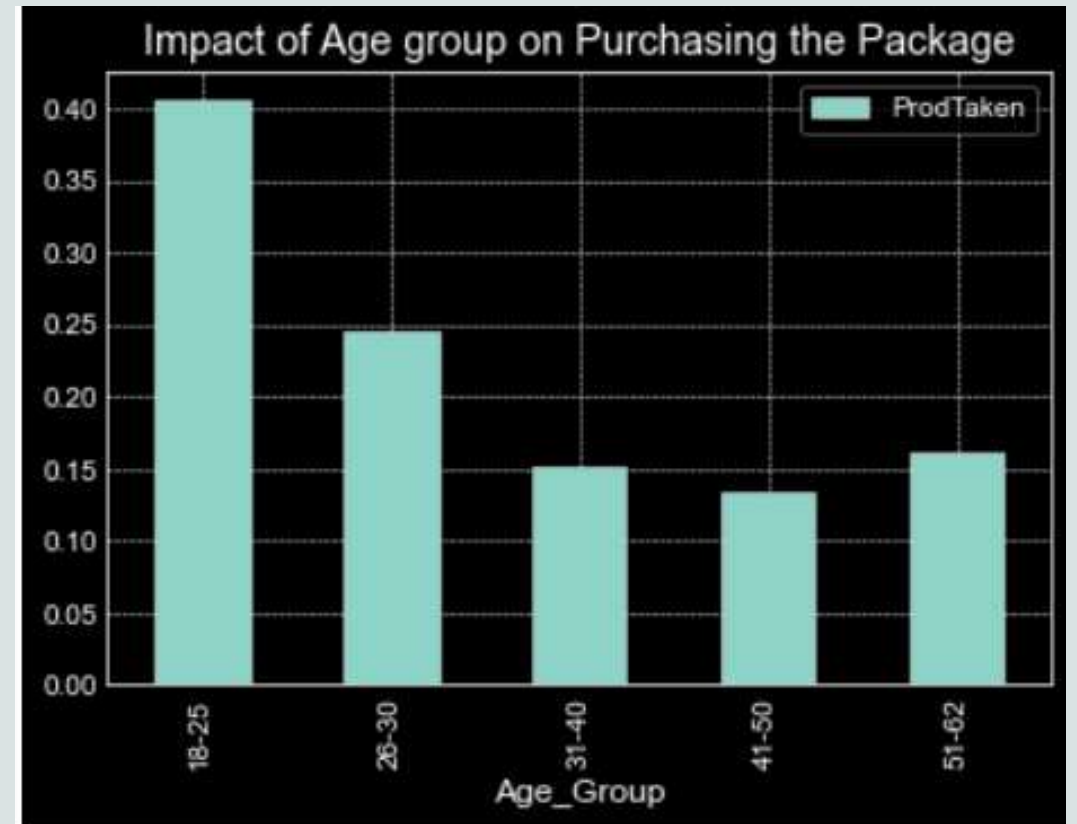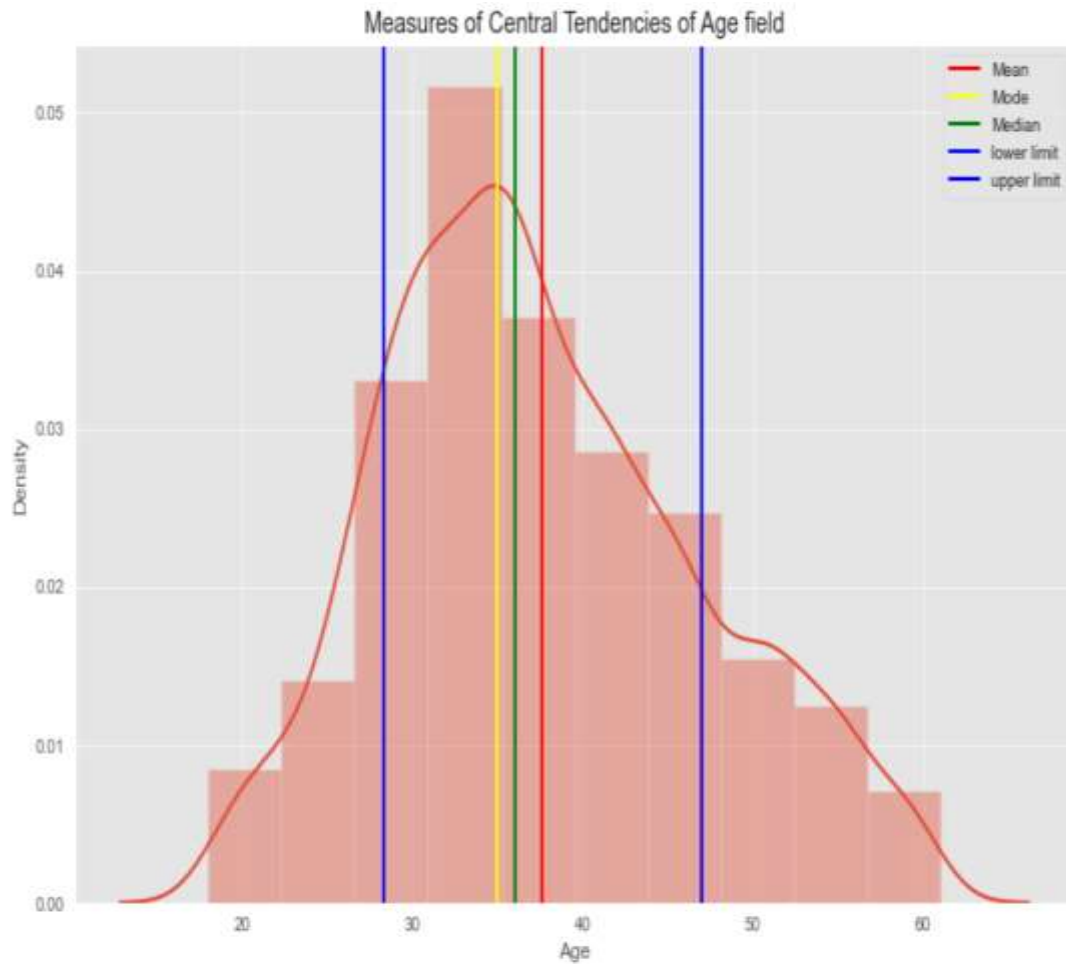
Customer's Age

- Almost 68% of the customers fall with in the blue lines and they are between the age of 28 years and 47 years

Who are the potential customers?

- Our AI model found a few important features of the customers that make them more likely to purchase the package

Feature Importances
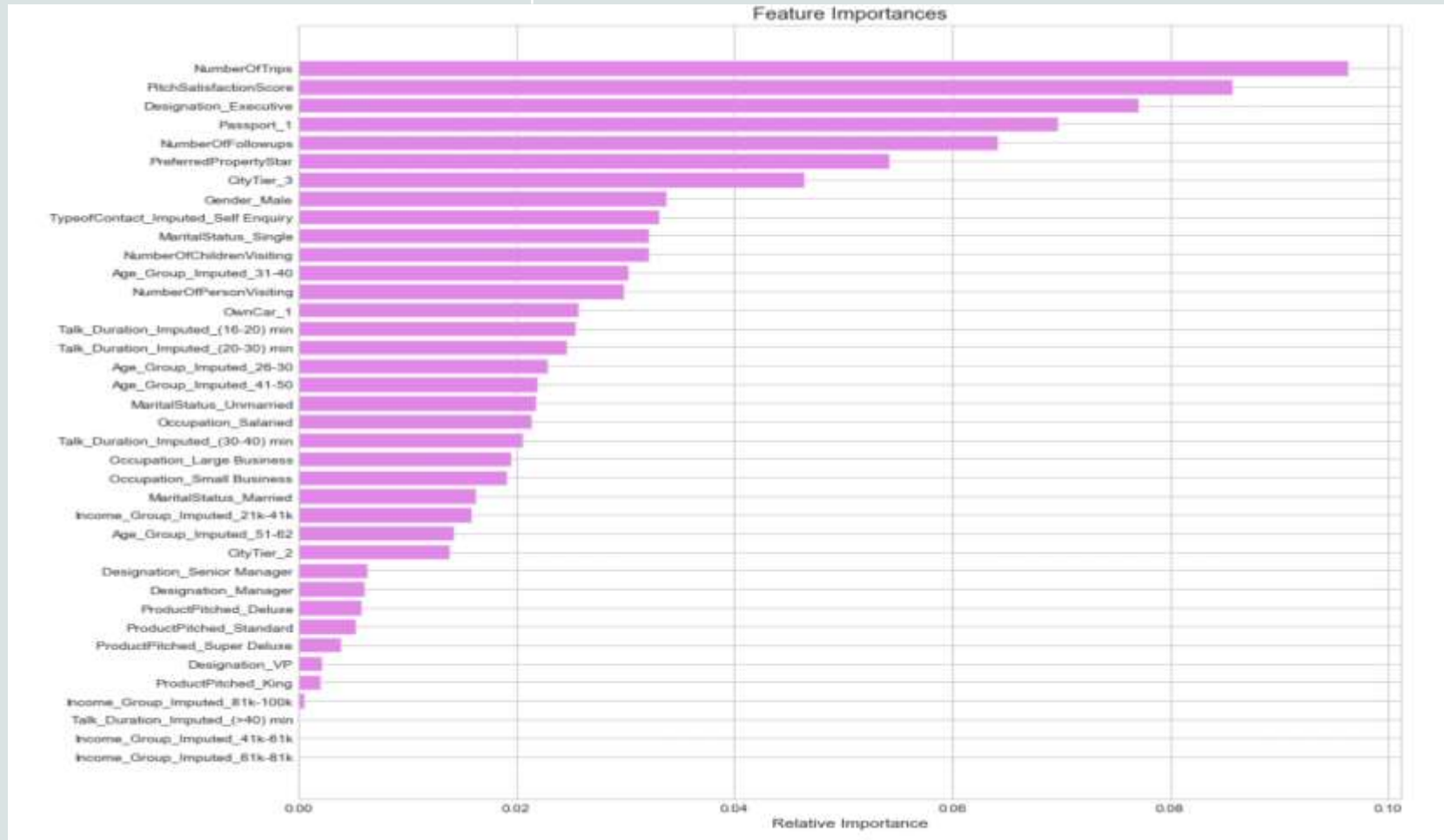
Potential Customers:

Customers who are working as Executives and Managers in their respective fields	Customers having Passports	Customers coming from Tier 3 cities	Customer whose Marital Status is Single,
Male Customers	Customers aged between 16 years and 40 years	Customers having an own car	Customers that go to trips often

AI Model Overview:

The model is Bagging Classifier Algorithm which is a bootstrap aggregation.

It takes M samples with replacement from the original dataset and trains the model on those samples.

The final model is obtained by averaging the "bootstrapped" models.

AI Model Summary

```
F1 Score of the model is: 0.8146067415730337

Confusion Matrix:
********************
[[767  18]
 [ 48 145]]

Classification Report:
**********************
              precision    recall  f1-score   support

           0       0.94      0.98      0.96       785
           1       0.89      0.75      0.81       193

    accuracy                           0.93       978
   macro avg       0.92      0.86      0.89       978
weighted avg       0.93      0.93      0.93       978
```

· The model is trained with 200 estimators which is the best param for getting the best score among the given params

· Overall accuracy is 93% and F1-score is 96% w.r.t customers who didn't buy the package whereas 81% w.r.t customers who bought the package

· Our Model gave 48 False Negative predictions and 18 False positive predictions

Why to Trust our Model?

The final model is selected from a pool of 9 models.

We evaluated one linear, three non-linear and five ensemble algorithms

The final model is selected based on F1-score which is the best metric when the target label is imbalanced

The model is tuned with multiple parameters, and we selected the best parameter with which the model can predict more accurately

Used Robust Scaling methods on the data before developing the model

Handled Missing values with the best Imputation techniques

Encoded all the categorical independent variables for the model to understand the data completely

Benefits of Implementing our Model

It will let you find the potential customers

Reduces the production cost which is spent on non-potential customers

Helps you to increase the no. of loyal customers

Increases the overall sales

Helps you to focus on key areas to improve the customer base and launch a new product successfully

Recommendations

The company can focus on the people that go to trips very often and introduce new plans to them

Focus on people coming from Tier 3 cities and organize some events in these cities for marketing the new package

Consider the standard of living od the customers and introduce the package free accordingly

The duration of the pitch should be moderate (not less or not prolonged)

There has been a great interest in customers to purchase the package if they are approached by the company

Introducing special deals to customers travelling with children or in groups

Focus on young people and efforts should be made to ignite the spark in them to purchase the package

Company can reach out to the organizations and attract the Executives, Managers to make them purchase the package

Any Questions?

Thank You!