



## Project Solution

### Customer Churn Analysis

#### An Exploratory Data Analysis using Python

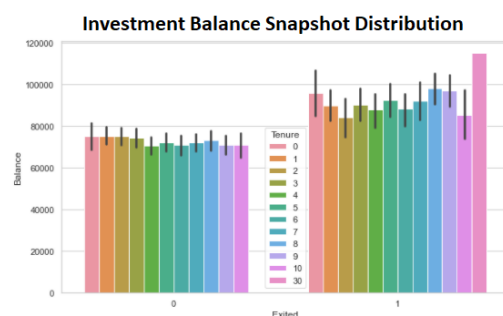
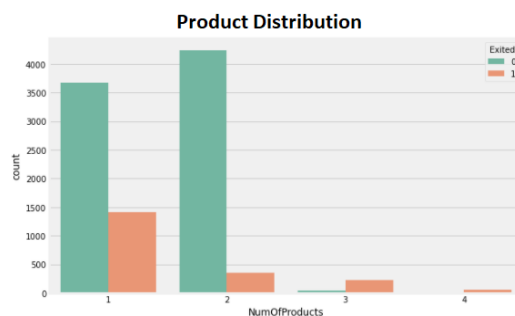
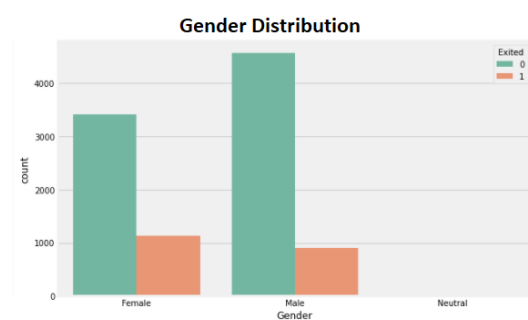
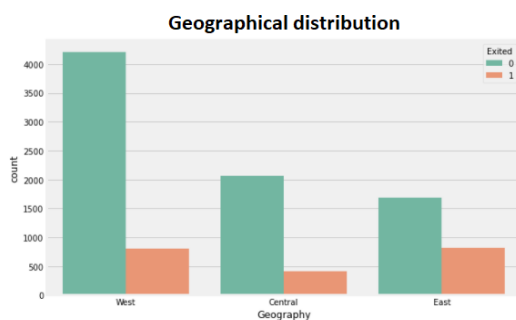
#### Overview:

From the available datasets, we have a list of 10,000 clients with their status on attrition from services of PMU products and we are finding the possible reason analytically on clients being churned and predict which PMU clients are most likely to churn and subsequently what all the possible ways to make them stay with PMU.

#### Analysis on churned PMU clients:

Based on the data available, below are initial insights:

- **20.37%** of clients have the status as churned
- The client's churned across geography but the rate is quite high in the East region with an attrition rate of **32.5%** followed by **16.17%** in Central and **16.15%** in the West region.
- It is observed that the clients from the East region are more likely to get churned.
- **25%** of female clients churned with compared to **16.43%** in male clients
- The number of clients with gender identified as Neutral is a handful and they consist of only **0.08%** out of which attrition rate is at **50%**.
- The client's attrition rate is very high with only **1** PMU product in their portfolio.





### For PMU clients in East Zone:

- **25.09%** of clients are based in the East zone, where the attrition rate is **32.5%** out of which **71.2%** of clients have only **1** PMU product in their portfolio.
  - **15.5%** attrition in clients with **2** PMU products in their portfolio.
  - **13.5%** attrition in clients with **3** or more PMU products in their portfolio
- ### For PMU clients in Central Zone:
- **24.77%** of clients are based in the East zone, where the attrition rate is **16.7%** out of which **64.65%** of clients have only **1** PMU product in their portfolio.

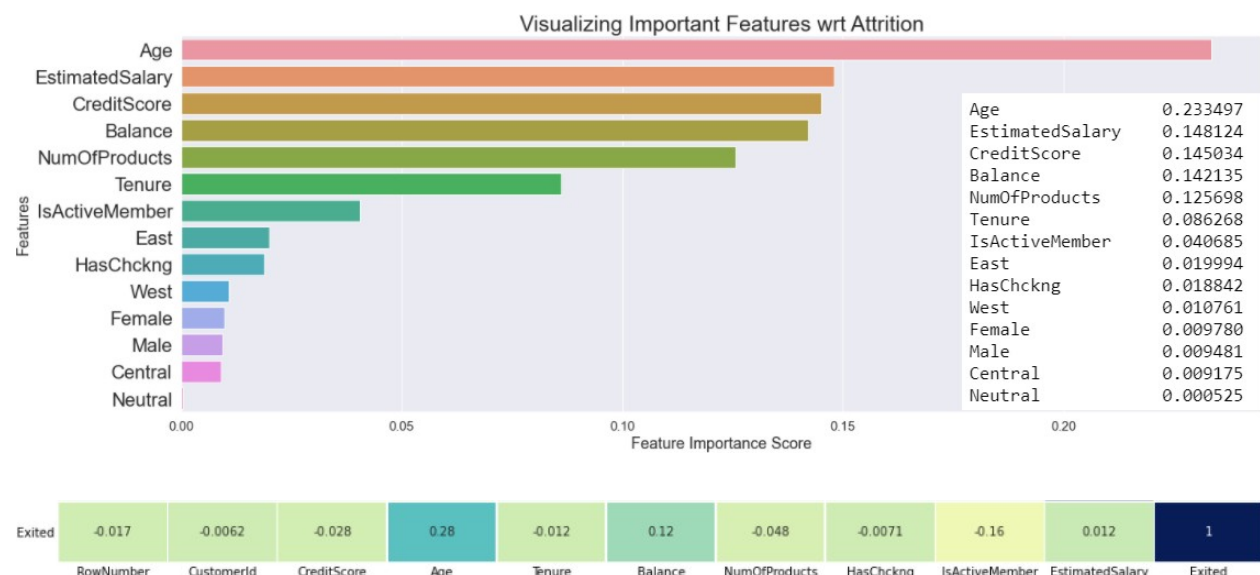
### Analysis on clients in West Zone:

- **50.14%** of clients are based in the East zone, where the attrition rate is **16.15%** out of which **69.62%** of clients have only **1** PMU product in their portfolio.

### Based on Investment Balance Snapshot of PMU clients:

- Out of **64%** of clients with an investment balance greater than **\$8000**, approximately **24%** of clients have been churned wherein **70%** of clients who got churned were having only 1 PMU product in their portfolio.
- Out of a total of **2037** churned clients, **500** PMU clients were having **ZERO (0)** Investment balance snapshot in their portfolio which account for **24.55%** of churned clients.

For the attrition rate, parameters from the client's portfolio which play an important role in getting them churned are Age, Estimated Salary, Credit Score, Investment Balance, Number of Products, Tenure, and whether they are an active member or not.





### **Strategies to stem attrition:**

To stem attrition, the first step is to identify the potential clients who are most likely to churn. To identify clients falling in the category of getting churned, a machine learning model can be designed and developed which will identify which PMU clients are potentially going to be churned.

Details of predictive model:

- A potential tree-based algorithm can be designed and implemented like a Decision tree, Random Forest Classifier etc.

From the potential clients who may get churned, we can analyze their portfolio based on:

- Age of client
- No of products with PMU
- Investment Balance Snapshot
- Credit Score
- Estimated Salary
- Tenure and client's Active status

From the analysis, it has been observed that the clients with low or zero investment balance, Age and a smaller number of PMU products are most likely to get churned and it can be analyzed that only parameters like No of Products, Investment Balance Snapshot, and client's Active status can have a change in a shorter duration of time which will directly impact on rest of the parameters on client's portfolio.

To stem attrition based on the above pointers:

- PMU can create an investment plan for the client with respect to their estimated salary and come up with multiple products where they can get engaged with the product of PMU and eventually increase their Investment Balance Snapshot.
- With increased numbers of product and Investment balance, activity status will also be changed to active, and eventually, a potentially churned client can stay with PMU for a longer tenure.

### **Solution:**

Click [here](#) to download the solution file.