Data 1030

Predicting Churning Customers

Reported by Yingfei Hong

From Data Science Initiative

Date: Oct 14th, 2021

https://github.com/YingfeiHong01/Data1030-FinalProject

Introduction

The problem is to predict the "churned customers" for the bank managers

1. Empower CRM and customer experience teams to be creative and proactive in their engagement with the customer
2. Retain existing customers

Dataset comes from LEAPS with 21 columns and 10127 data points

It is a classification problem

Exploratory Data Analysis

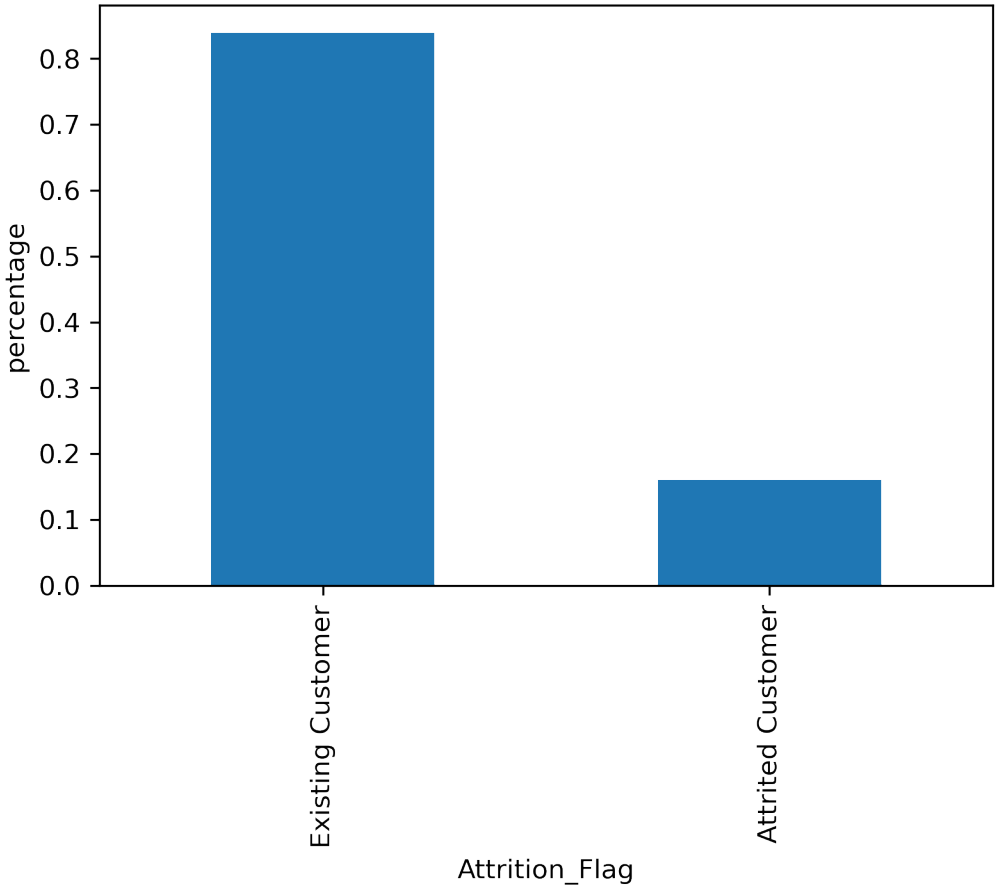

Figure 1 Distribution of Target variable

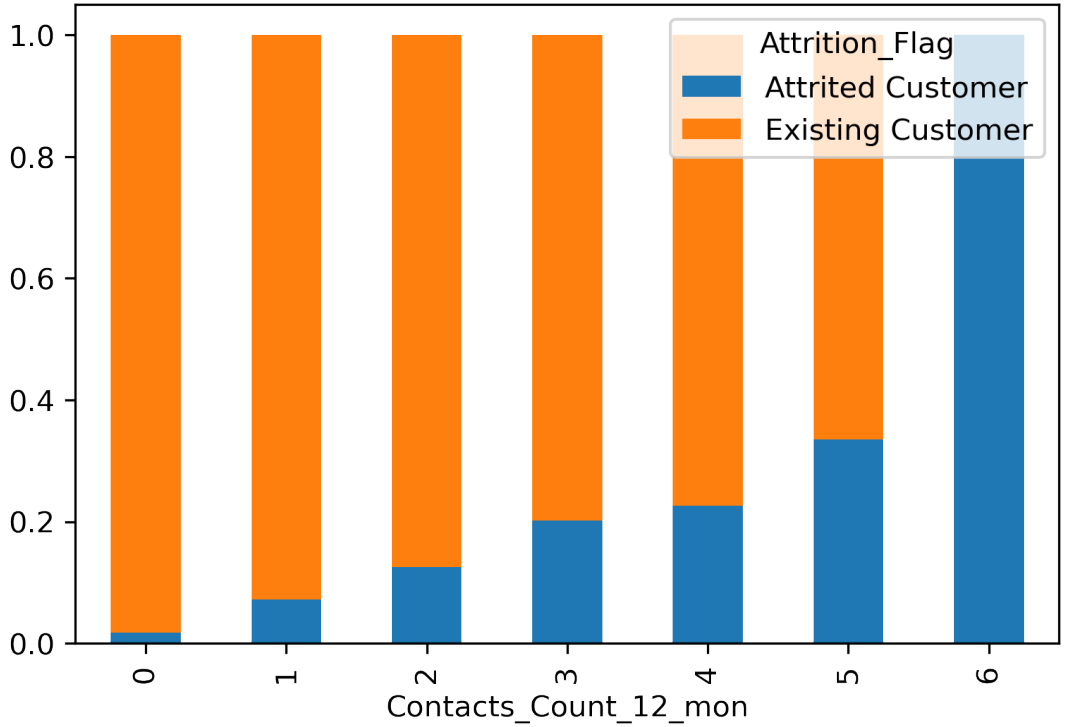

Figure 2 The distribution of the number of contacts across two different customers

Exploratory Data Analysis

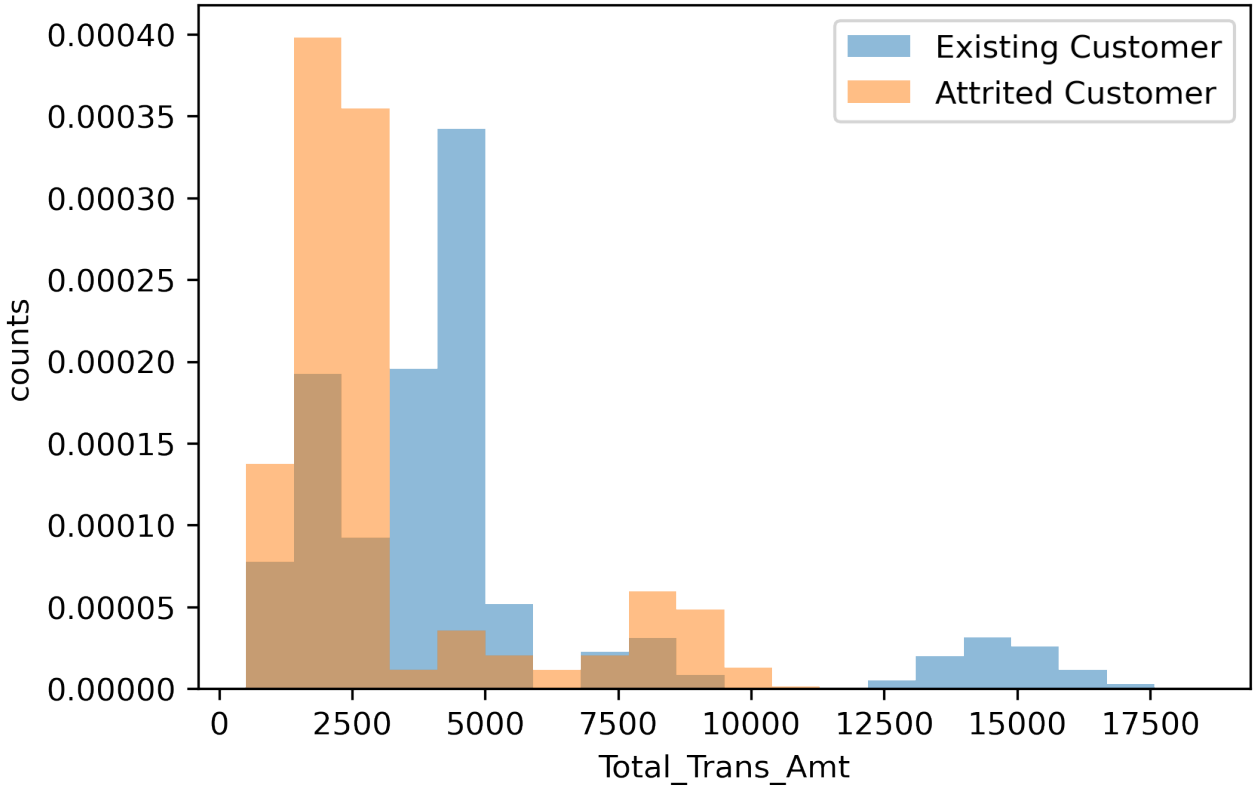

Figure 3 The distribution of total transaction amount across two different customers

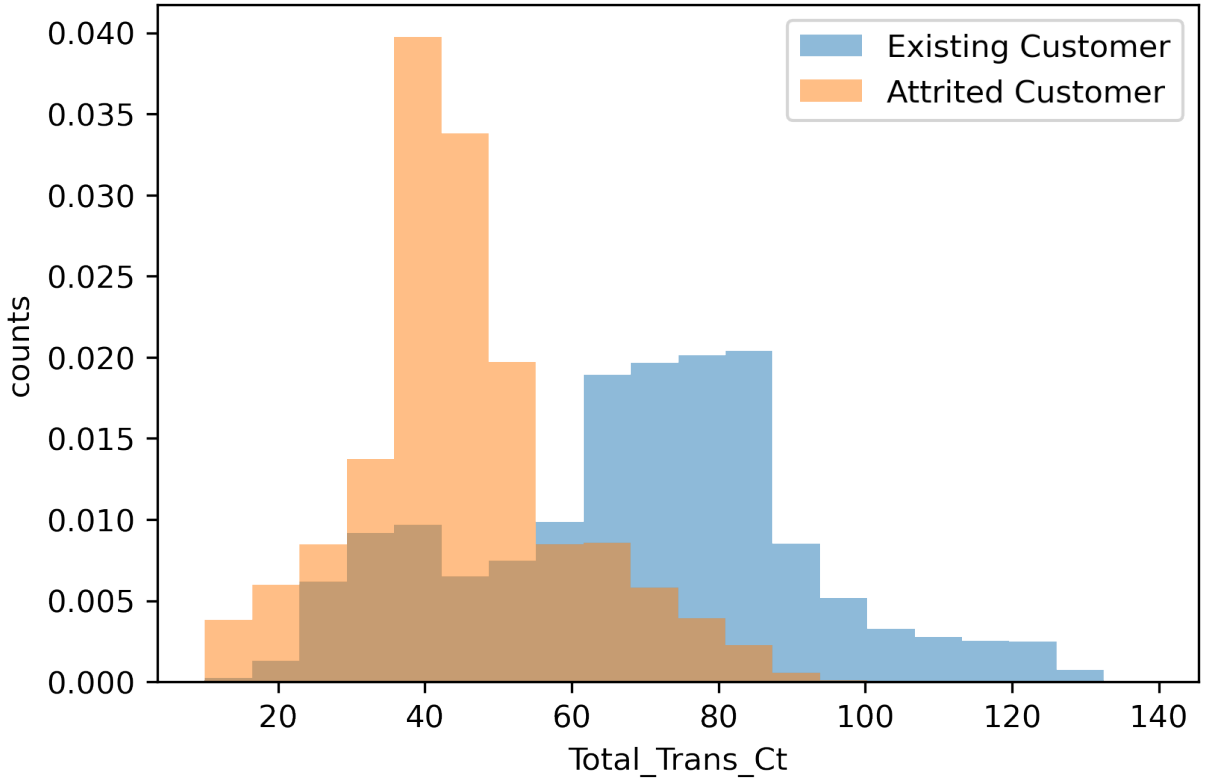

Figure 4 The distribution of total transaction count across two different customers

Splitting and Preprocessing

Stratify method ; train, val, test = 0.6, 0.2, 0.2

OneHotEncoder for category features like gender and marital status
OrdinalEncoder for ordinary features like education level…
StandardScalar for continuous features like total transaction count…

Missing Value: “unknown” in some demographic variables
Treat them as a new category

LabelEncoder for target variable

Train size = (6076, 24), validation size = (2025,24), test size = (2026,24)

Thanks for listening

END