

Data Glacier – Virtual Internship

Final Project

Name: Isha Panjwani

Email: ishapanjwani5@gmail.com

Country: Canada

Company: Data Glacier

Specialization: Data Analytics

Deliverable: Week 10

Group: Individual

Problem Statement: In this project, our client is a Latin American credit union company XYZ. They are having issues in cross-selling banking products such as credit cards, savings accounts, retirement accounts, and safe deposit boxes. It can take a significant amount of research and business knowledge to increase cross-selling. To succeed in the cross-selling area of the business, Data Analyst at ABC analytics is searching for the best technique to be recommended.

Business statement: The goal of ABC analytics company is to perform Exploratory data analysis on the data provided by the client and gain some meaningful insights. As a data analyst intern, my job was to perform EDA on the credit union's dataset and create visualizations to analyse the data and to provide recommendations to the company to increase effective cross-selling of banking products.

Github Repo link: <https://github.com/isha1912/Cross-Selling-Recommendation-EDA>

EDA Steps Performed: After cleaning the dataset –

- (i) Statistical values are induced by *df.describe()* function from pandas library.
 - a. Count, Mean, Standard Deviation, minimum, maximum value as well as 25%, 50%, and 75% of values are calculated.
- (ii) Skewness is defined for each column.
- (iii) Correlation between all the calculated fields have been calculated by *df.corr()* function.
- (iv) A dataframe has been created for number of accounts associated for all banking products.
- (v) Only active accounts have been kept for accurate hypothesis.
- (vi) Two categories are defined – Single account and Multiple accounts (more than one banking product associated to one customer is defined as multiple accounts and thus categorized as cross-selling product).
- (vii) Number of products are analysed by age.
- (viii) Number of products are analysed for adult age group (highest number of products).
- (ix) Highest & lowest selling banking product is identified.
- (x) Number of customers by gender.
- (xi) Segmentation of customers is done.
- (xii) Customer are bifurcated by average income (above average income & below average income).

- (xiii) Top 10 channels by which customers joined are identified.

Basic Insights:

- (i) There are a greater number of Inactive Customers than Active Customer.
- (ii) Some accounts are sold together such as Payroll is highly related to Pensions² and Payroll Account is correlated with Pensions², Payroll, Debit and Credit Card.
- (iii) XYZ Credit Unions's the greatest number of customers are in the Adult Age Group.
- (iv) Customers in the age of 40-50 are more likely to possess more than 10 different banking products at XYZ Credit Union.
- (v) The highest number of accounts sold are Current Accounts, Direct Debit, and Private Account; while the lowest sold accounts are Medium Term Deposits, Short Term Deposits, Derivative accounts, Savings Account and Guarantees.
- (vi) There are more female customers than male customers in XYZ Credit Union.
- (vii) There are approximately 130,000 individuals have accounts with XYZ Credit Union. Nearly 20,000 VIP members are associated with the Union.
- (viii) Customers with below average income are more than the customers with above average income.
- (ix) The number of individual customers is more than the total number of college graduates and VIPs.
- (x) Over a million customer have joined XYZ Credit Union through top 10 channels out of total 147 channels.

Recommendations:

- (i) Introducing loyalty programs such as health insurance or rewards for engaging with the account may increase the use of accounts that have been inactive for a while (dormant accounts).
- (ii) Current account is the most selling banking product in XYZ Credit Union. For the customers having current account, scheme of gaining higher interest such as 4.5%, for keeping certain amount in savings account will increase sale of savings account.

- (iii)** Providing certain benefits to provincial and federal government for projects such as construction, may increase sale of Guarantees.
- (iv)** Engaging more with adults through social media coverage or advertising will help customers well understand product/services provided by XYZ Credit Union. Direct mail, email, statement inserts, banner ads on website, messages on ATMs, outbound calling campaigns, etc. can be applied as part of customer engagement.
- (v)** Engaging more with the top 10 channels used by customers to join the Union will increases chances of getting more customers.