

Business Problem, Dataset, and Data Definitions

Background: Our client is a chain of retail gas stations (ex: ESSO, Shell, BP) and they would like to increase their sales of Premium fuel as it is a higher-margin item. Our client is part of a Coalition Loyalty program (ex: Esso with Aeroplan, Shell with AirMiles, and BP with Nectar).

Marketing Strategy: Our client would like to deploy a Direct Mail marketing campaign (3 cents off per liter) to members of the Coalition Loyalty program they are a part of in hopes of driving the volume of premium-fuel they sell. However, they only have enough budget to target 20% of the customer base.

Our Task: The client is looking for our expertise to help identify which customers would be the best to target for such campaign.

Additional Background on Data Collected by Loyalty Programs: Loyalty programs allows us to tie purchases (POS data) to individual customers (customer data). We would typically have access to many of the following types of data :

- Historical purchases (transactional) with the Gas Retailer
- Customer socio-demographic and geolocation data
- Cross-partner spend (i.e. the number of Air Canada flights flown, or purchases at Metro)
- Customer interaction data with inbound/outbound marketing channels

The Dataset:

We will be using a dataset with ~100k rows that contains both customers that purchase premium-fuel and those who do not. In addition, we have various customer attributes and historical behavior/purchase data that would typically be available through a Coalition Loyalty program.

Data Dictionary:

The following table describes the various columns/fields available in PREMIUM_FUEL.CSV and a description of what they mean. Please read through this and familiarize yourself prior to our second in-class session.

Column Name	Column Definition
ID	Randomly generated unique customer identifier
CLIENT_GENDER	Customer gender (M=Male, F=Female)
CLIENT_AGE_BAND	Customer age band
NUM_FMLY_MEMBERS	Numer of family members in the customer's household
NUM_CARS_HH	Number of cars in the customer's household
CLIENT_REGION	Mnemonic representing a geographic region
PARTNERS_SHOPPED	The unique number of coalition loyalty partners the customer has transacted with in the last 12 months
AVG_WKLY_SPND_ALL_PARTNERS	The average weekly spend the customer has had across all partners within the Coalition program
REWARD_HISTORY	The customer's reward history (see below for details)
Breakage	Customers who've had their loyalty currency expire
Gift-card Redeemer	Customer who've redeemed for air and non-air rewards in L12 months
Never Redeemed	Customers who've never redeemed
No Redemptions L18 months	Customer who haven't redemed in the last 18 months
No Redemptions L24 months	Customer who haven't redemed in the last 24 months
Retail High-Volume	In-store high volume redeemer
Retail Low-Volume Non-Saver	In-store low-volume redeemer due to low accumulation
Retail Low-Volume Saver	In-store low-volume redeemer, not due to lack of accumulation
Retail X-mas Redeemer	In-store x-mas redeemer
Travel Only Redeemer	Travel Partner and In-store Redeemer
Travel and Retail Redeemer	Travel Redeemer
ENDING_PT_BALANCE	The number of loyalty points (or miles/other currency) in the customer's account
CNT_VISITS_GAS_STATION	The number of times this customer has shopped at one of our Gas Stations in the last 12 months
PROP_WKDAY_EVE	The proportion of transactions at our Gas Stations during a weekday evening in the last 12 months

PROP_WKDAY_DAY	The proportion of transactions at our Gas Stations during the day on a weekday in the last 12 months
PROP_WKND	The proportion of transactions at our Gas Stations during a weekend in the last 12 months
FUEL_TXNS_L12	Total number of fuel transactions at our Gas Stations during the last 12 months
AVG_FUEL_VOL_L12	Average fuel volume purchased at our Gas Stations in the last 12 months
SHOP_TXNS_L12	The number of transactions made at our Gas Stations' convenience/car-wash/coffee retail stores in the last 12 months
SHOP_AVG_SPEND_L12	The average spend of transactions made at our Gas Stations' convenience/car-wash/coffee retail stores in the last 12 months
FUEL_CARD_FLAG	Flag to show if customer holds a fuel card issued by our Gas Station (1=Yes, 0=No)
DISTANCE_KM	Distance from customer's home address to the nearest location of our Gas Station