Apprentice Chef, Inc Case Analysis

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Insights

This research aims to understand which customers will subscribe to this service of cross-selling promotion. To gain insights into the relationship between cross-selling promotion and bunch of features which may affect subscribe action. Here discuss two main insights.

Insight 1

Percentage of time a customer followed meal recommendations higher would be most positive factor to impact the behaviour that customers subscribe Halfway service, which is make sense here. If customers prefer to follow the recommendations of the service, there is a high probability that they will follow the recommendation to subscribe to new service "Halfway".

Insight 2

Base on the (Pearson) correlation, we can see other following insights here:

1.The second positive factor is 'PROFESSIONAL_EMAIL', People have to view professional mail in weekdays, which means that they have high chance to glance the news of Halfway subscribe information than that letters come to personal or junk mail.

2.The third positive factor is 'NUMBER_OF_NAMES' - This is an interesting insight: if the length of the customers' name reflects their status, then it is possible that people of a higher status prefer this romantic promotion to receive a half bottle of wine from a local California vineyard every Wednesday.

3.The fourth positive factor is 'CANCELLATIONS_BEFORE_NOON'. Customers who cancelled the order before noon can receive a full refund, this means that they had more satisfied experience on this application, so perhaps they will glad to subscribe more new service.

4.The fifth positive factor is 'MOBILE_NUMBER'. Perhaps the application has message news for mobile numbers to increase the buyer's chance to get the new service subscribers.

5.The most negative factor is 'junk email'. Which is make sense, since this e-mail is fake and never be read by users and it is possible that they missed the newsletter about the new service. (Table 1)

Actionable Recommendation.

I recommend conduct additional research on what determines a client's trust in recommendations, which factors impact clients most to will follow the recommendations. After the research, perhaps base on the results company can create some funny recommendations on app to increase clients' interests to follow more funny recommendations.

Final model's highest AUC value

My best performance model is GBM (Gradient Boosted Machines) Model, Training Accuracy is 0.84, Testing Accuracy is 0.81, AUC score is 0.76.

Reference

Table 1(Pearson) Correlation

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CROSS_SELL_SUCCESS                        1.00
FOLLOWED_RECOMMENDATIONS_PCT              0.46
professional_email                       0.17
number_of_names                          0.16
CANCELLATIONS_BEFORE_NOON                 0.16
MOBILE_NUMBER                             0.10
TASTES_AND_PREFERENCES                    0.08
REFRIGERATED_LOCKER                       0.07
unknown_email                            0.06
flag_CANCELLATIONS_AFTER_NOON             0.05
PC_LOGINS                                0.04
MASTER_CLASSES_ATTENDED                   0.04
CONTACTS_W_CUSTOMER_SERVICE               0.04
personal_email                           0.04
PACKAGE_LOCKER                           0.04
flag_PC_LOGINS                           0.03
MEDIAN_MEAL_RATING                        0.03
MEDIAN_MEAL_RATING_5                      0.03
AVG_PREP_VID_TIME                         0.03
out_CONTACTS_W_CUSTOMER_SERVICE_hi        0.03
out_CANCELLATIONS_AFTER_NOON              0.03
m_FAMILY_NAME                            0.02
flag_WEEKLY_PLAN                         0.02
MEDIAN_MEAL_RATING_4                      0.02
EARLY_DELIVERIES                         0.02
LARGEST_ORDER_SIZE                        0.02
out_AVG_PREP_VID_TIME                     0.02
flag_MOBILE_LOGINS                        0.02
out_LATE_DELIVERIES                       0.02
flag_EARLY_DELIVERIES                     0.01
TOTAL_MEALS_ORDERED                       0.01
TOTAL_PHOTOS_VIEWED                       0.01
out_TOTAL_PHOTOS_VIEWED                   0.01
number_of_names_out                       0.01
AVG_TIME_PER_SITE_VISIT                   0.01
LATE_DELIVERIES                          0.01
out_REVENUE                              0.01
PRODUCT_CATEGORIES_VIEWED                 0.00
UNIQUE_MEALS_PURCH                        0.00
REVENUE                                  0.00
out_WEEKLY_PLAN                          0.00
MEDIAN_MEAL_RATING_3                      0.00
out_AVG_CLICKS_PER_VISIT_lo              -0.00
out_LARGEST_ORDER_SIZE                   -0.00
out_CANCELLATIONS_BEFORE_NOON            -0.00
MEDIAN_MEAL_RATING_2                     -0.01
WEEKLY_PLAN                              -0.01
out_UNIQUE_MEALS_PURCH                   -0.02
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MEDIAN_MEAL_RATING_1                    -0.02
out_AVG_TIME_PER_SITE_VISIT             -0.02
AVG_CLICKS_PER_VISIT                    -0.04
out_MASTER_CLASSES_ATTENDED             -0.04
out_CONTACTS_W_CUSTOMER_SERVICE_lo      -0.05
CANCELLATIONS_AFTER_NOON                -0.05
out_TOTAL_MEALS_ORDERED                 -0.05
MOBILE_LOGINS                           -0.05
out_AVG_CLICKS_PER_VISIT_hi             -0.07
junk_email                              -0.28
```

Source: Develop a (Pearson) Correlation (YU_HUANG_A2_Analysis, 2020)