



Unlocking Business Growth

Data Insights to Boost Retention and Reduce Churn

INTRODUCTION

Ted & Poppy: A rapidly growing pet supply business with physical stores and a subscription-based dog food service. The subscription model was designed to offer convenience and build customer loyalty.

Business Problem: Increasing customer churn rate threatens revenue & profitability; the company wants to identify key factors influencing churn and improve retention.

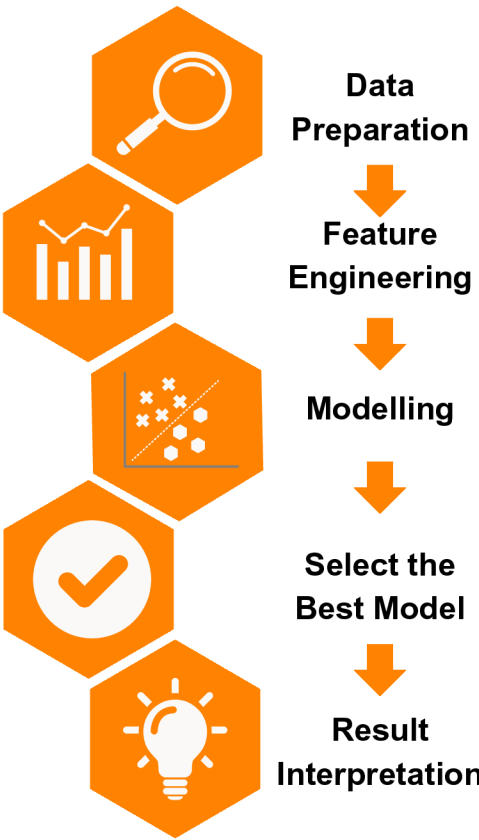
Data*

200,000 Observations
subscribers at the beginning of Q4 2024
90 days analysis period

29 Variables
Demographic, Customer Engagement & Behavior,
Subscription, Product & Purchase Details

15.9% Churn Rate

METHODS



Model Assumptions

Independent Observations
Threshold (by default 0.5)
Time-Invariant

Data Preparation

Data Transformation
Encoding Data

Feature Engineering

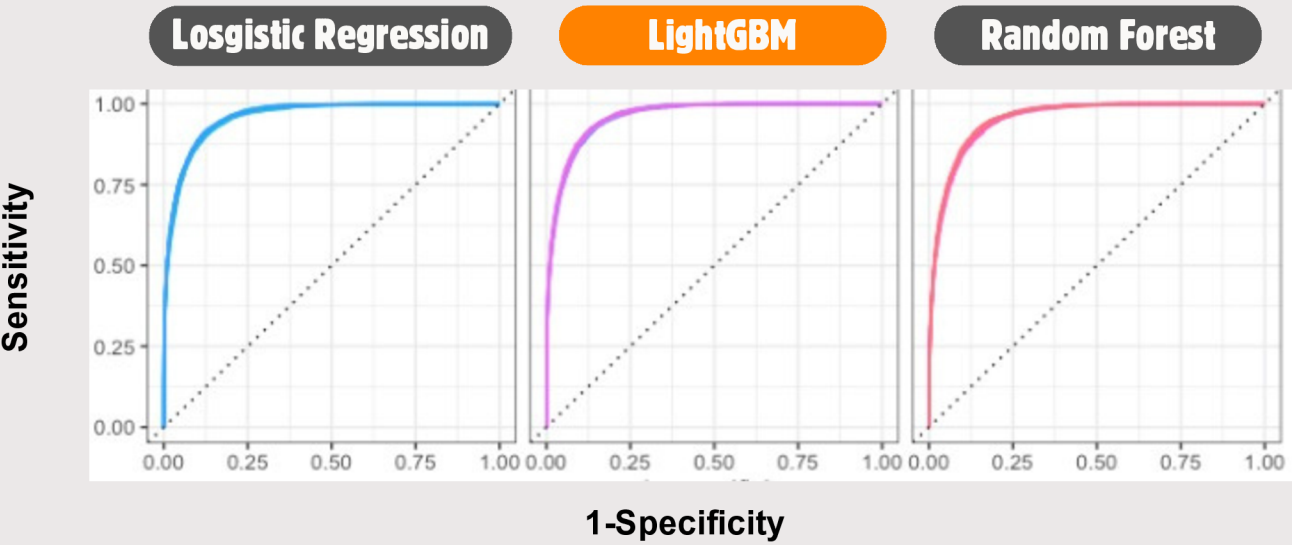
Creating New Feature
Bivariate Analysis

Modelling

75% training/25% test



Model Comparison and Selection - Top 3 Performers



ROC Curve by Model and Fold

Model Performance

	Accuracy	Sensitivity	PPV
LightGBM	0.879	0.907	0.575
Logistic Regression	0.885	0.901	0.592
Random Forest	0.910	0.734	0.712

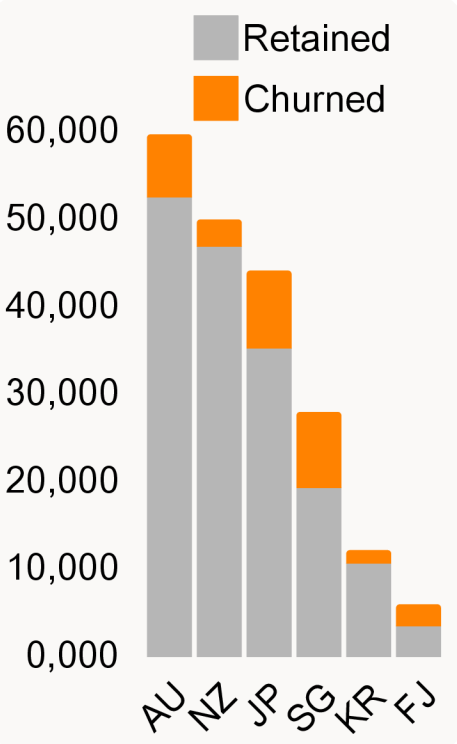
LightGBM Confusion Matrix

	Actual Churn	Actual Retain
Prediction Churn	7,230	5,329
Prediction Retain	732	36,720

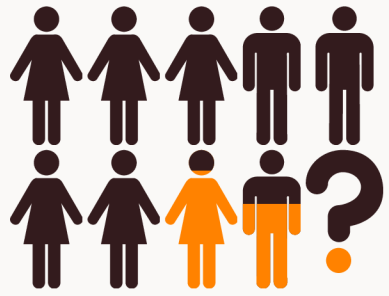
INSIGHTS

Demographic

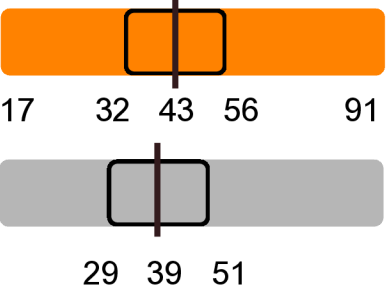
Location



Gender



Age

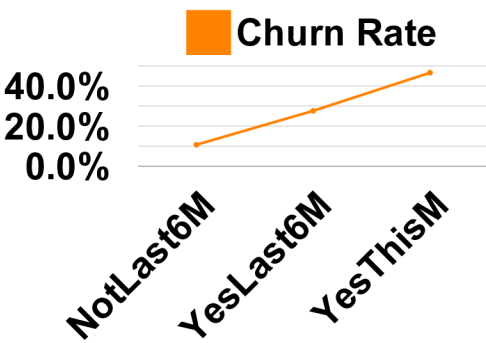


Behavior

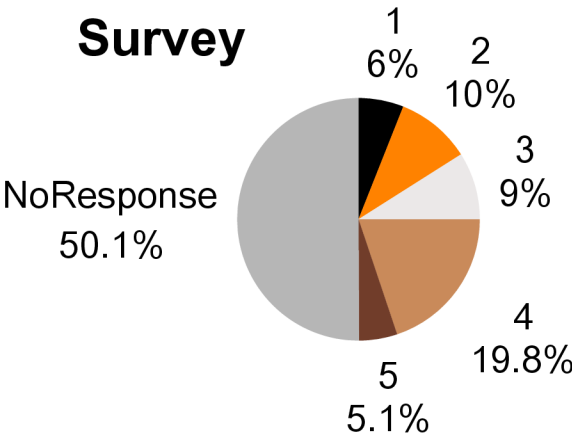
Days Since Last Web Purchase

51 v.s. 19

Support Tickets



Satisfaction Survey



Discount Usage

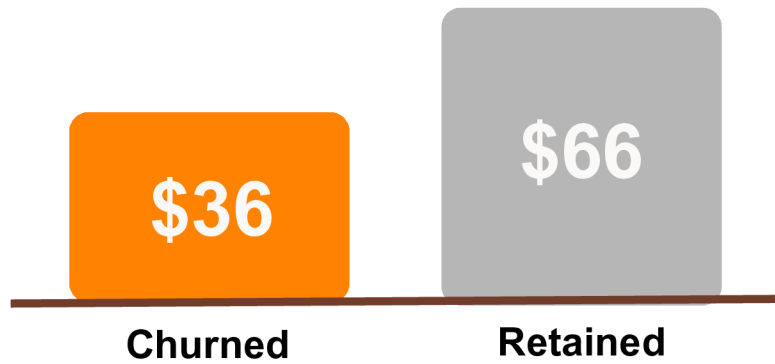
62% v.s. 78%

Product & Purchase

Popular Subscriptions



Total Purchase Value



RECOMMENDATIONS

KEY VARIABLES

- Days Since Last Web Purchase
- Satisfaction Survey
- Support Ticket
- Location
- Discounted Rate

- Proactive Re-engagement:**
Target customers inactive for 50 days with personalized offers and reminders
- Improve Satisfaction:**
Use an AI chatbot to address concerns from low-rated survey responses¹
- Support Experience Enhancement:**
Optimize ticket resolution speed and service quality to reduce churn
- Target High-Churn Locations:**
Focus on Singapore and Fiji by offering localized promotions, better customer service
- Refine Discount Strategy:**
Implement gamification (e.g., loyalty rewards) instead of direct discounts²