

EXIT

Understanding Customer Churn

8th April 2022

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Agenda

1

Background & Objectives

2

Define Customer Churn

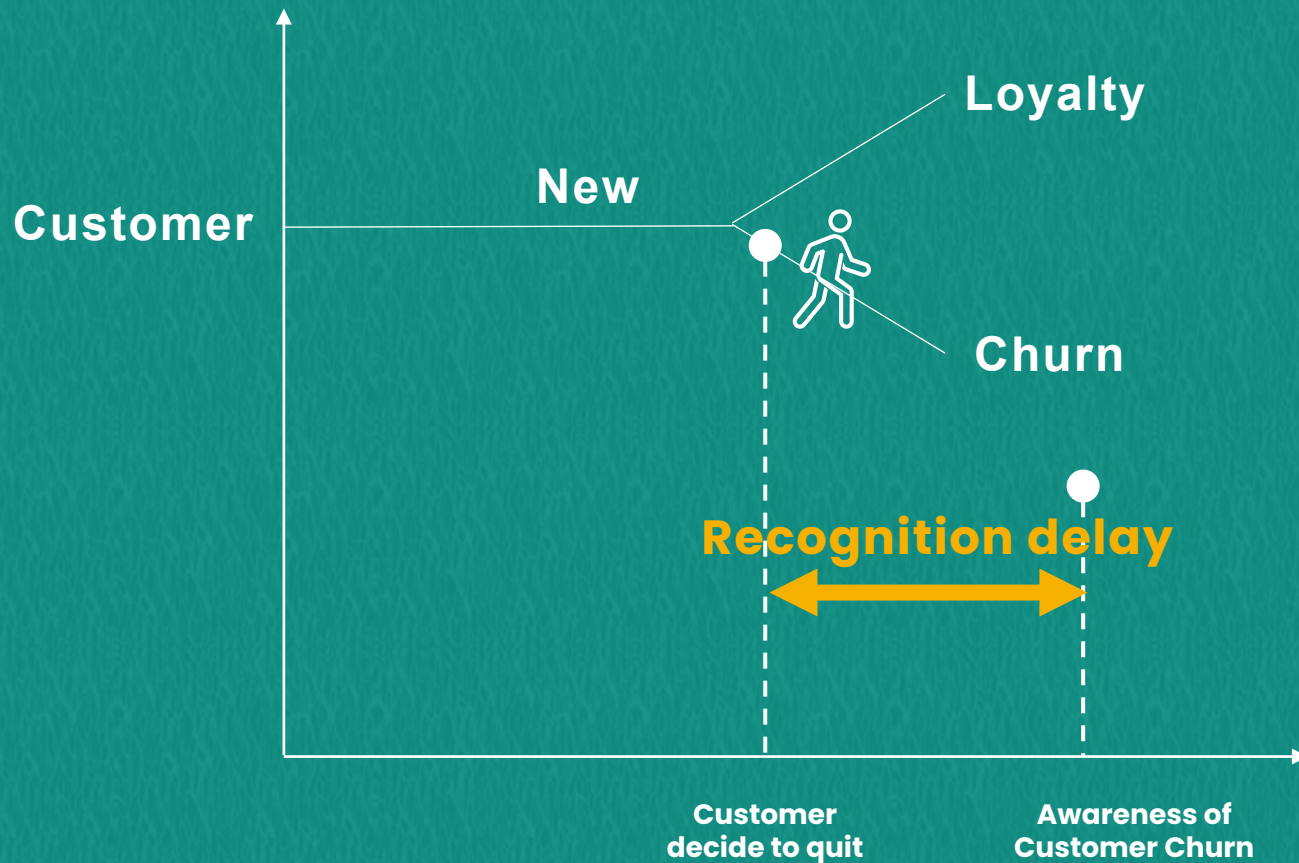
3

**Key Attributes
Customer Churn**

4

Suggestions

Background



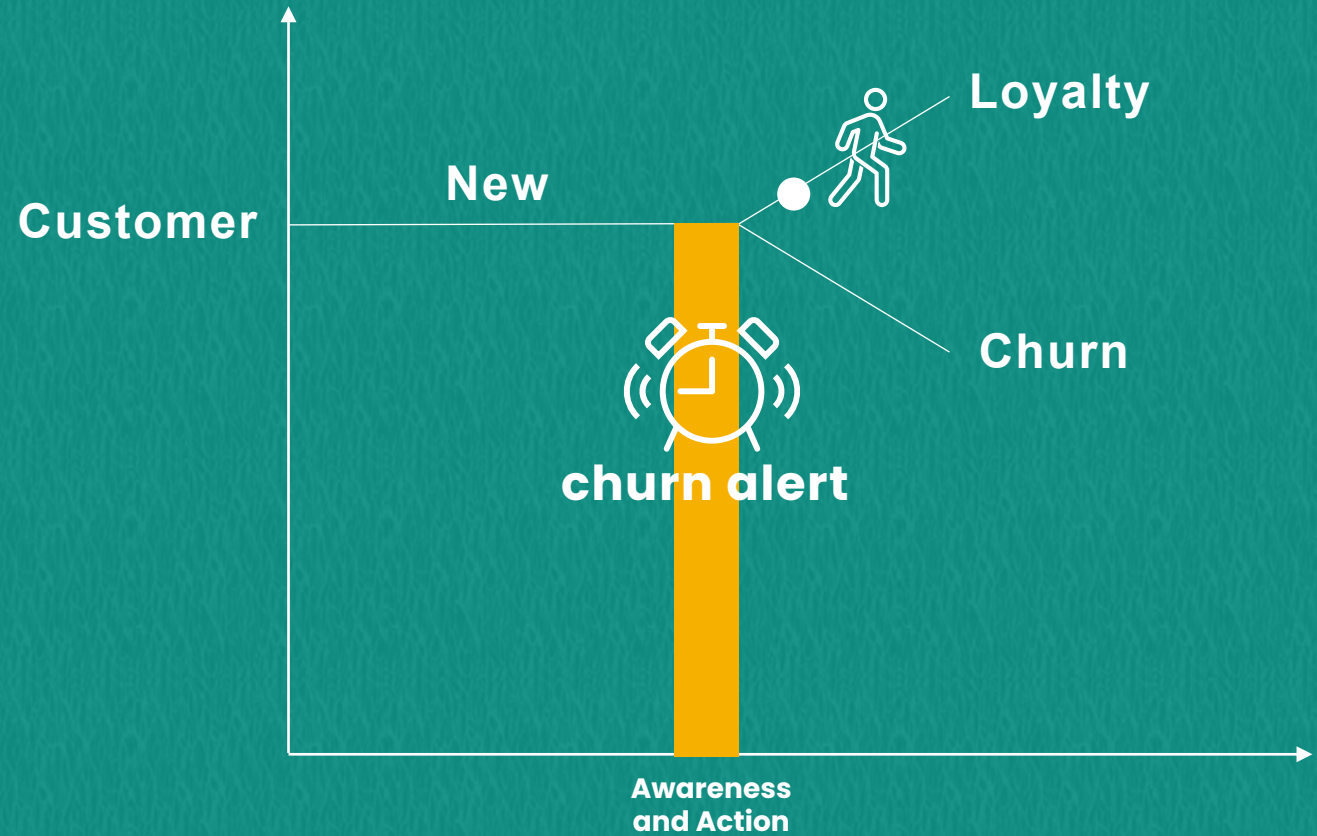
Recognition delay

When we recognize a customer as a **'lost customer'**, he or she has been leaving our service for quite some time. There is **a time lag** in between. We found it is not easy and it is **TOO LATE** to earn them back when we have missed the best time.

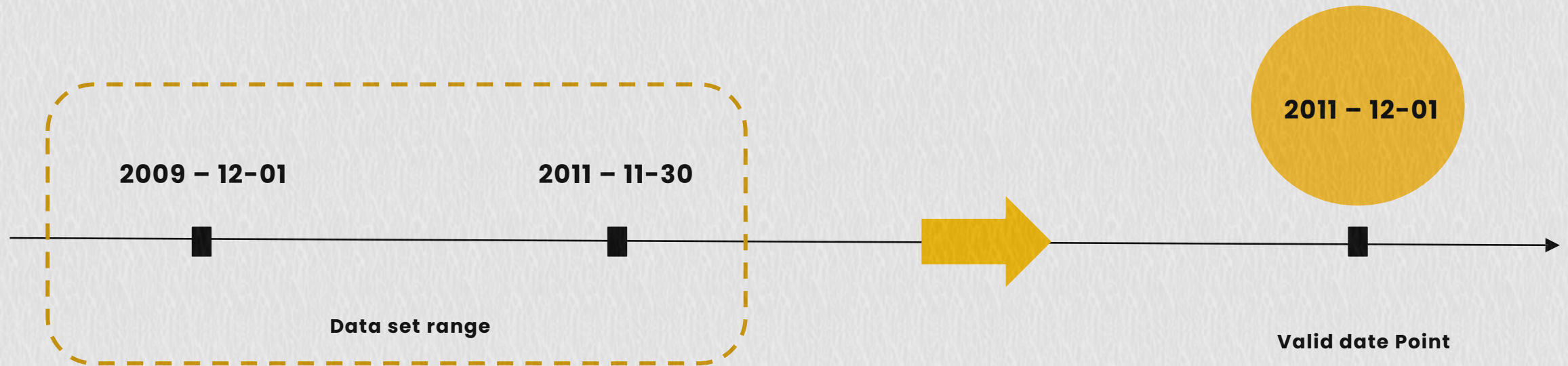
Objective

Define 'Customer Churn'

- Attributes of Churning Customers



Analysis Context



Data Source:

ABC's customer transaction data

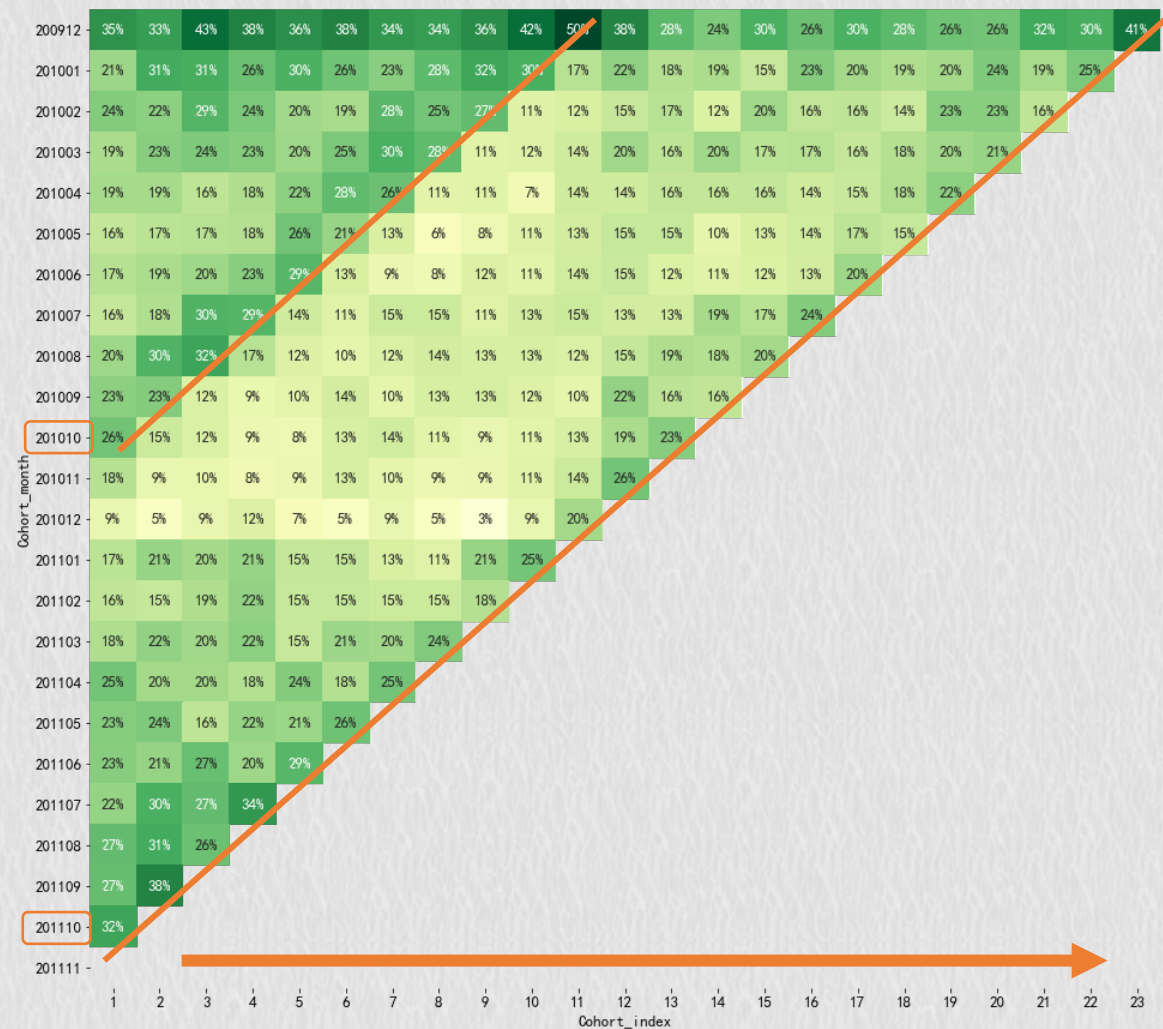
Hypothesis:

How does our customer churn rate be look like on this day?
How many customers will leave us?

Validation check:

All findings and recommendations presented today are based on and limited to the above timeline range.

Cohort Analysis by Time

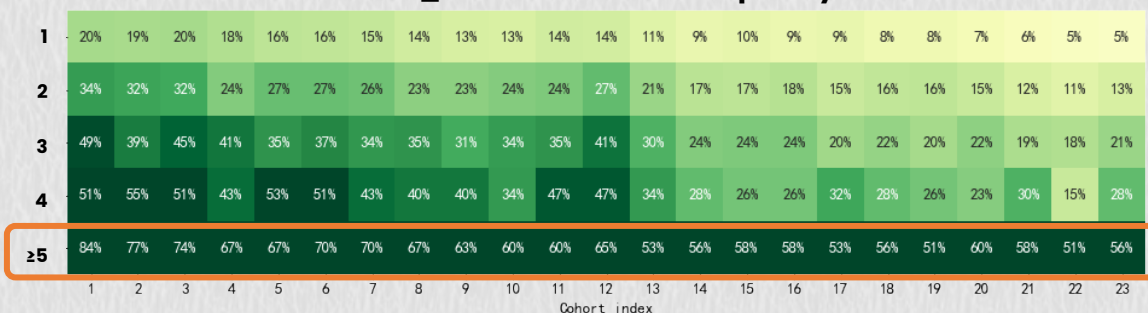


Retention Rate are **decreasing** Over time

October is the **peak period**

Cohort Analysis by Purchase behavior

1st_Month Purchase Frequency



With Frequency↑, retention Rate ↑

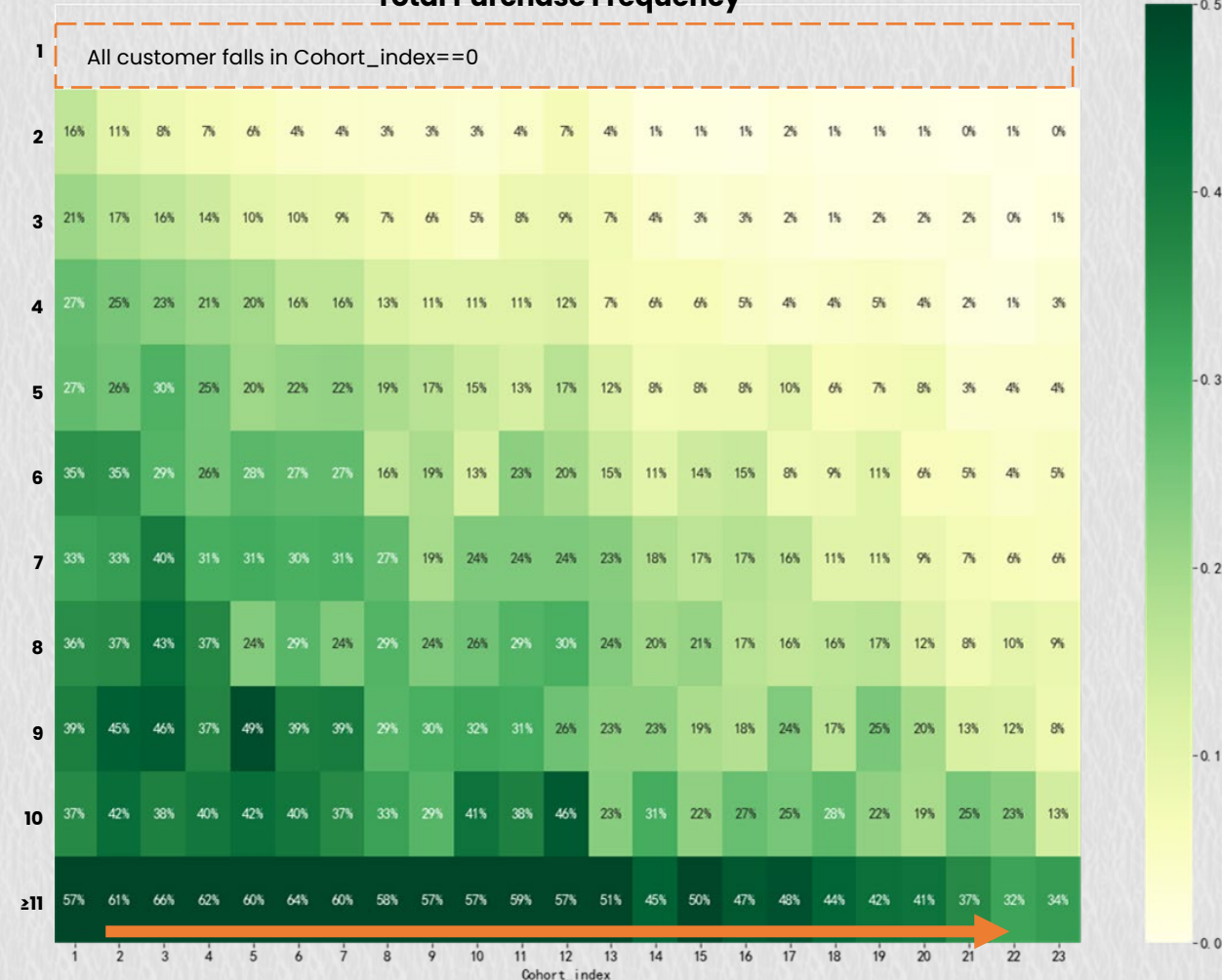
When 1st_Month Purchase Frequency > 4
retention Rate > 50%

Retention Rate are **decreasing** Over time

[1st_Month Purchase Frequency]: Nos of Invoices per customer for their first purchase month.

[Total Purchase Frequency]: Nos of Invoices per customer till 2011-11-30.

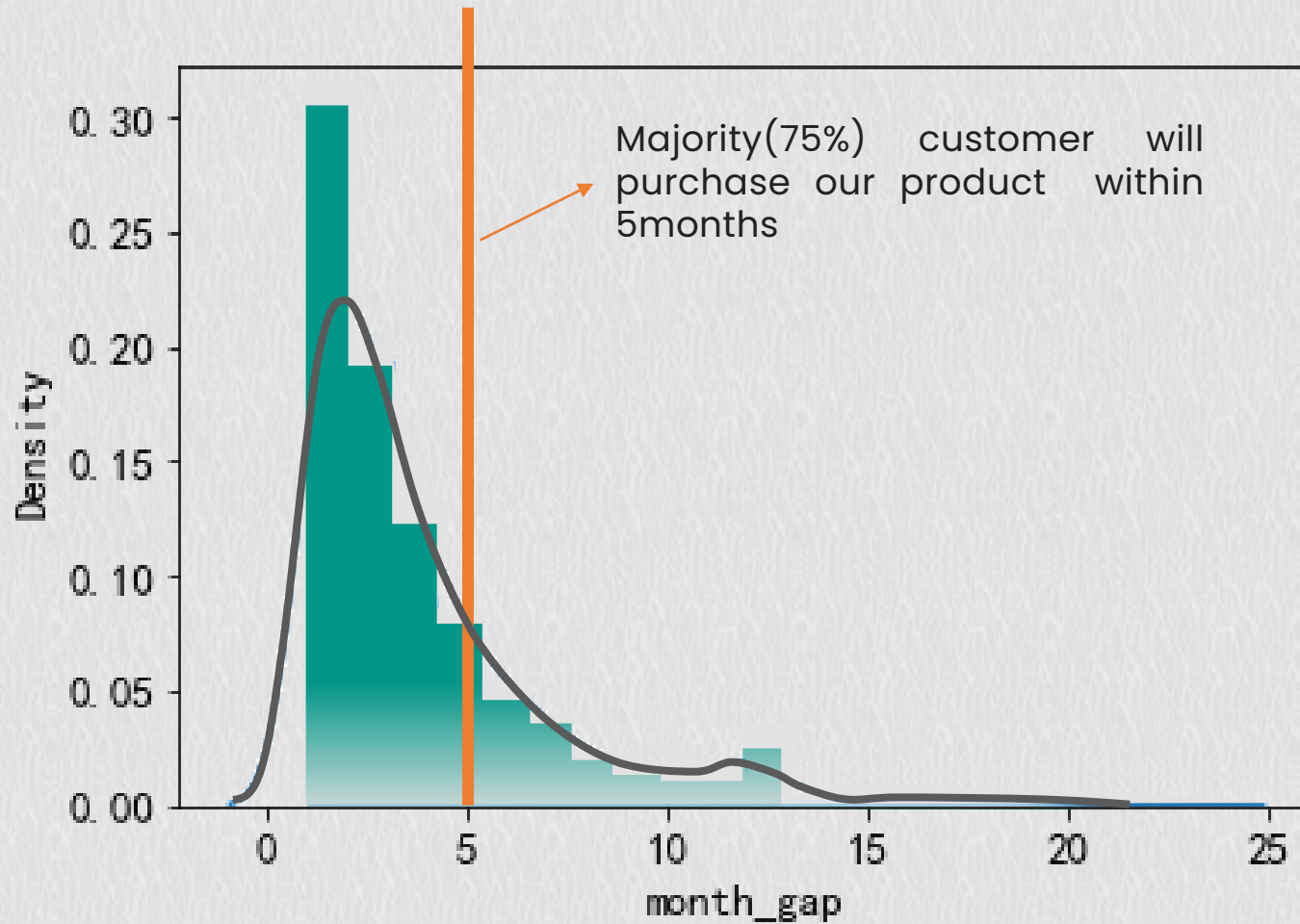
Total Purchase Frequency



with Total Purchase Frequency ↑
retention Rate ↑

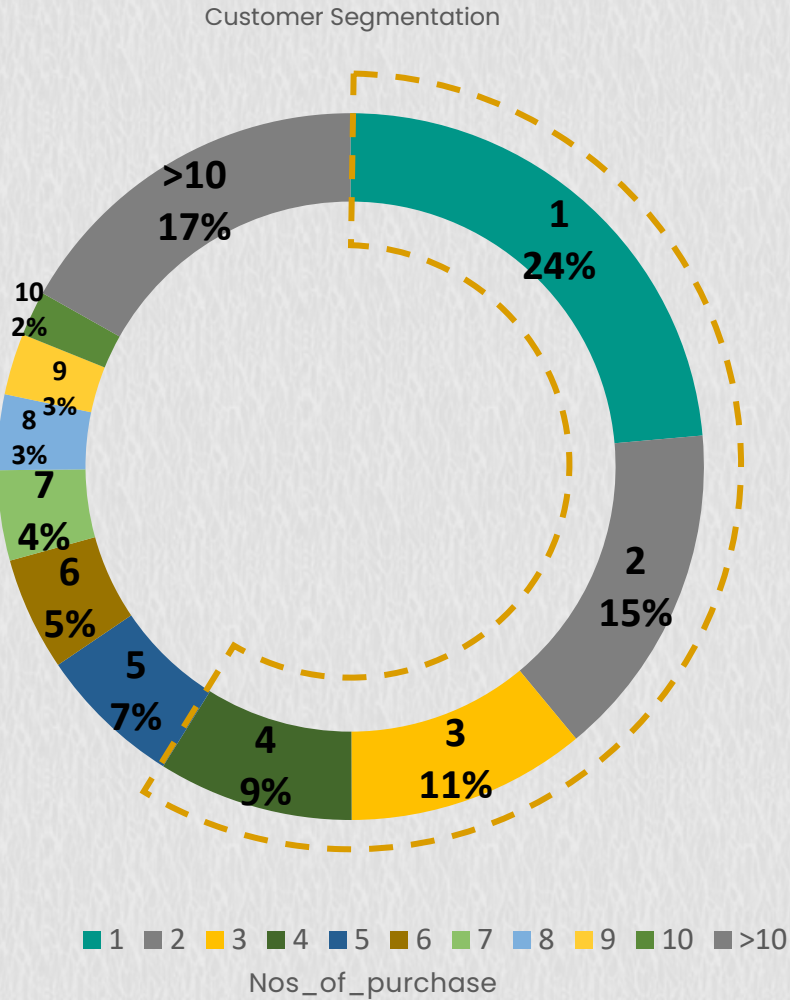
So, How do we define 'Customer Churn': Those who has not bought anything for **≥5 months**

WHY:



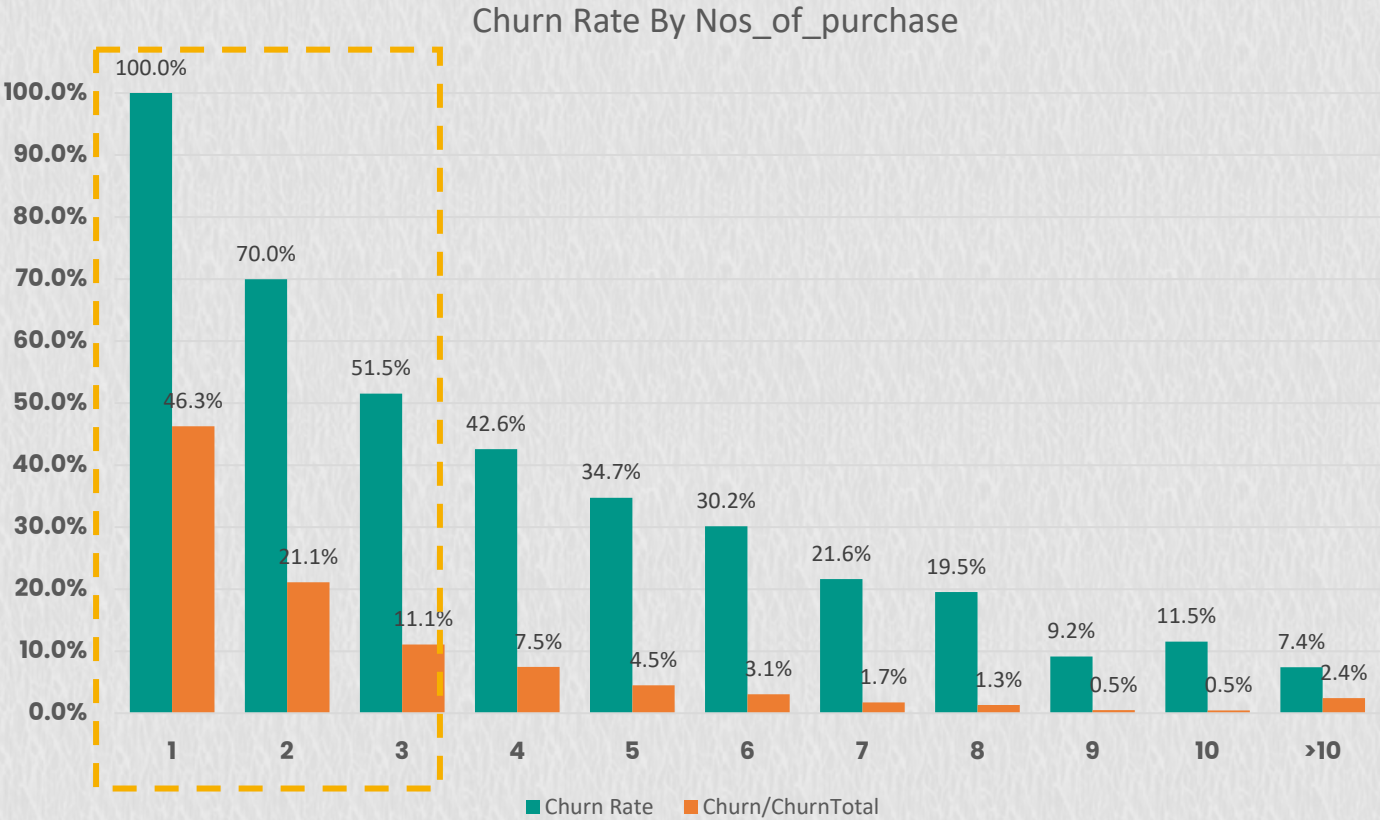
What are the **key attributes of the
Churn Rate**

≥ 50% customer Purchase 1-4 times.



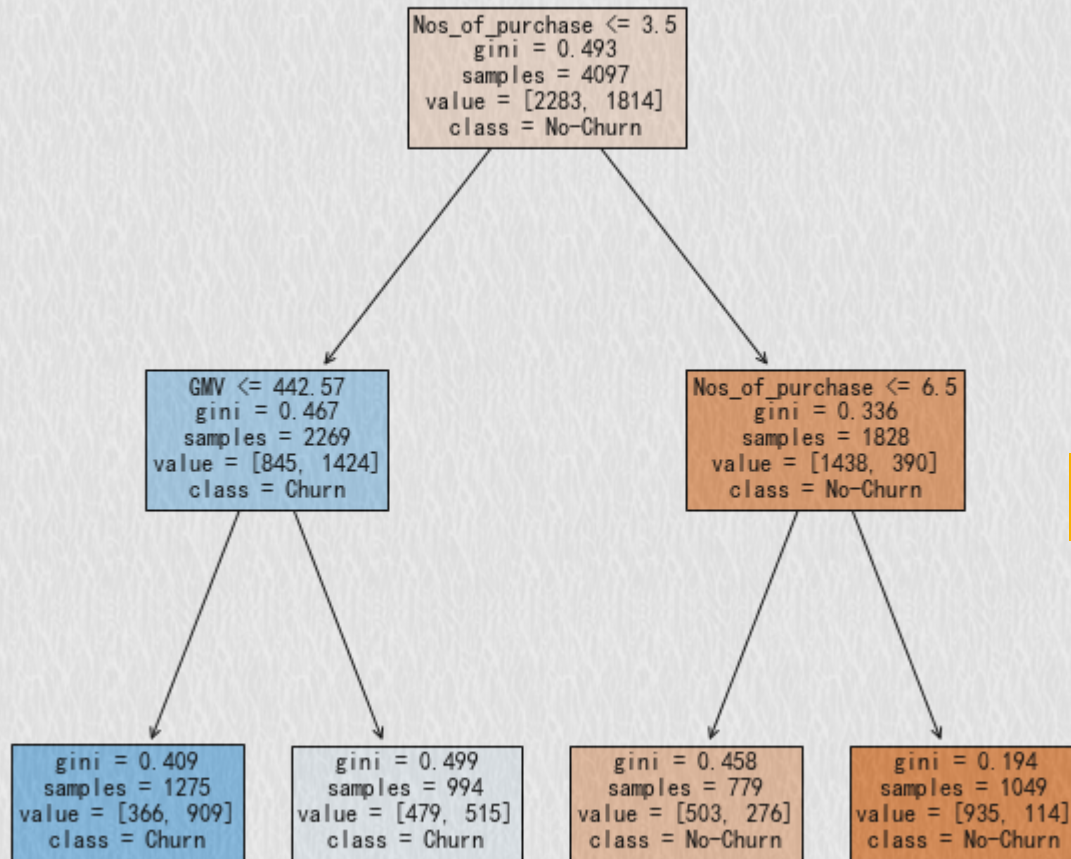
(Only consider Old Customer)

Churn Customer:
Total Purchase times ≤ 3 times
Majority of them are 'One & Done' Customer



Modelling & Evaluation

DecisionTreeClassifier



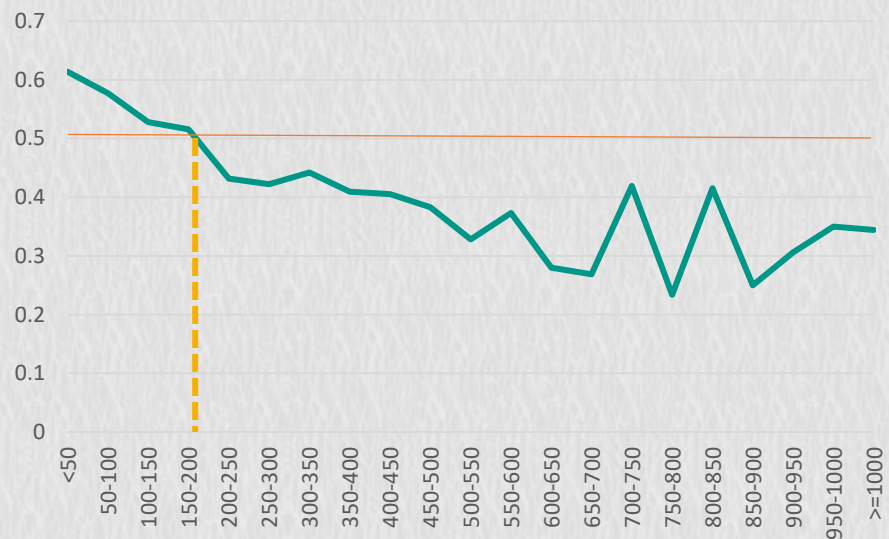
	Importance score
Nos_of_purchase	0.904448
GMV	0.095552

Churn Customer

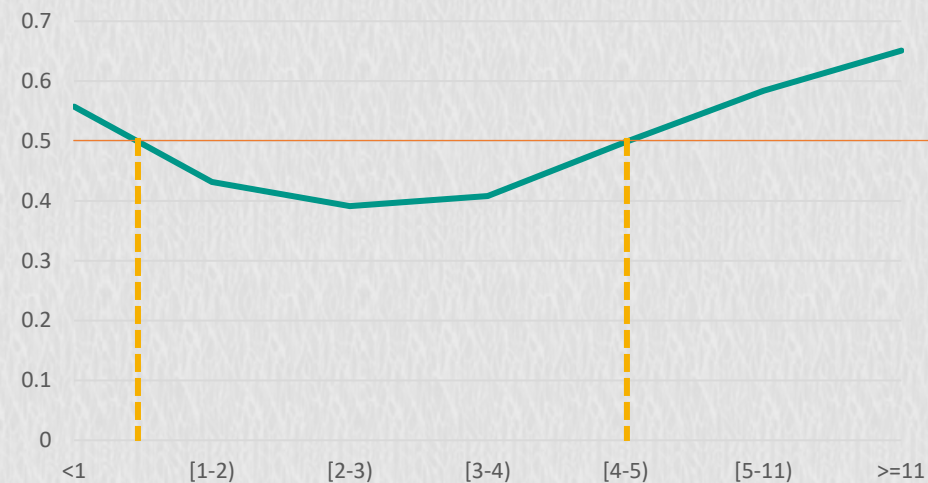


Total transaction number <= 3.5 times
Total transaction amount <= \$442.57

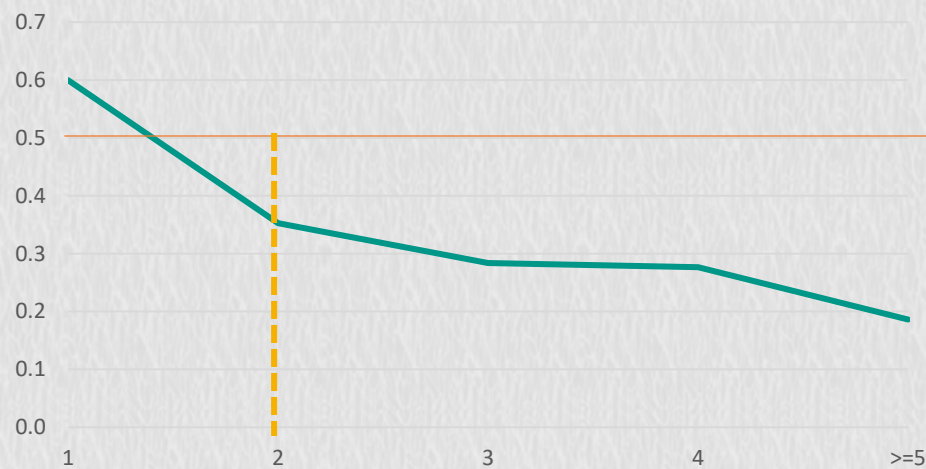
Churn Rate by 1st_GMV



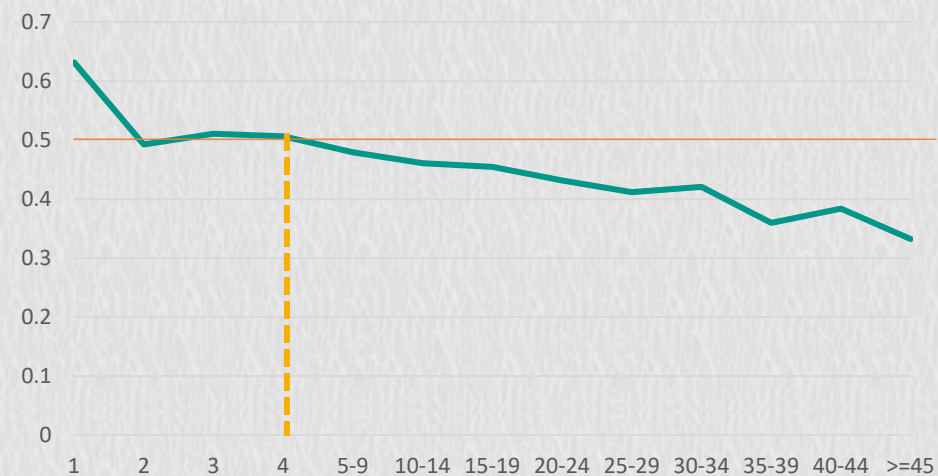
Churn Rate By Price_Mean



Churn Rate by 1st Month_Frequency



Churn Rate by 1st_Product_Wide



Modelling & Evaluation

Model: Random Forest



The model will rank the features based on importance.

Will Predict the Customer Churn based on important features.

Accuracy: 0.7509 Precision:0.7061 Recall:0.7418

Features	importance
GMV	0.223784
Price_Mean	0.172712
Product_Wide	0.168137
1st_GMV	0.159162
Nos_of_purchase	0.143767
1 st _Product_Wide	0.114324
1st_Month_Frequency	0.018114

Evaluation :

Key attributes	Accuracy	Precision	Recall
Nos_of_Purchase < 4	0.7056	0.7051	0.9054
Price_Mean > \$5	0.8302	0.8000	0.9855
Price_Mean < \$1	0.6814	0.6667	0.8571
1 st _GMV < \$50	0.7278	0.7547	0.8247
1 st _GMV \$50- \$100	0.7774	0.7570	0.9050
1 st _GMV \$100- \$150	0.7225	0.7051	0.8160
1 st _GMV \$150- \$200	0.7370	0.7367	0.7623
1st_Product_Wide == 1	0.8040	0.8150	0.8924
1st_Product_Wide == 2	0.6957	0.6512	0.8235
1st_Product_Wide == 3	0.7482	0.7308	0.8028
1st_Product_Wide == 4	0.7237	0.6923	0.8182
1st_Month_Frequency < 1	0.7465	0.7039	0.7742

So, what we know about Churn Customers?

Currently Purchase times ≤ 3 times

1st Month Purchase times < 2 times

Total GMV $< \$442.57$

1st _ GMV $< \$200$

Churn

1st _Purchase Product Wide ≤ 4

They buy products which are mostly fall in $< \$1$ or $> \$5$

Suggestions

For One-time purchaser:

Who just purchase once & still within purchase Month.

- 🕒 at the 30 days after they finish the 1st purchase. Try to let them purchase 1 more time.
- 🕒 for those who purchase bulk Qty but product wide ≤ 4 .

For Old Customer:

Who purchase > 1 times & pass the purchase Month.

- 🕒 at 4 Months from their last purchase.
- Try to let their purchase times > 4.

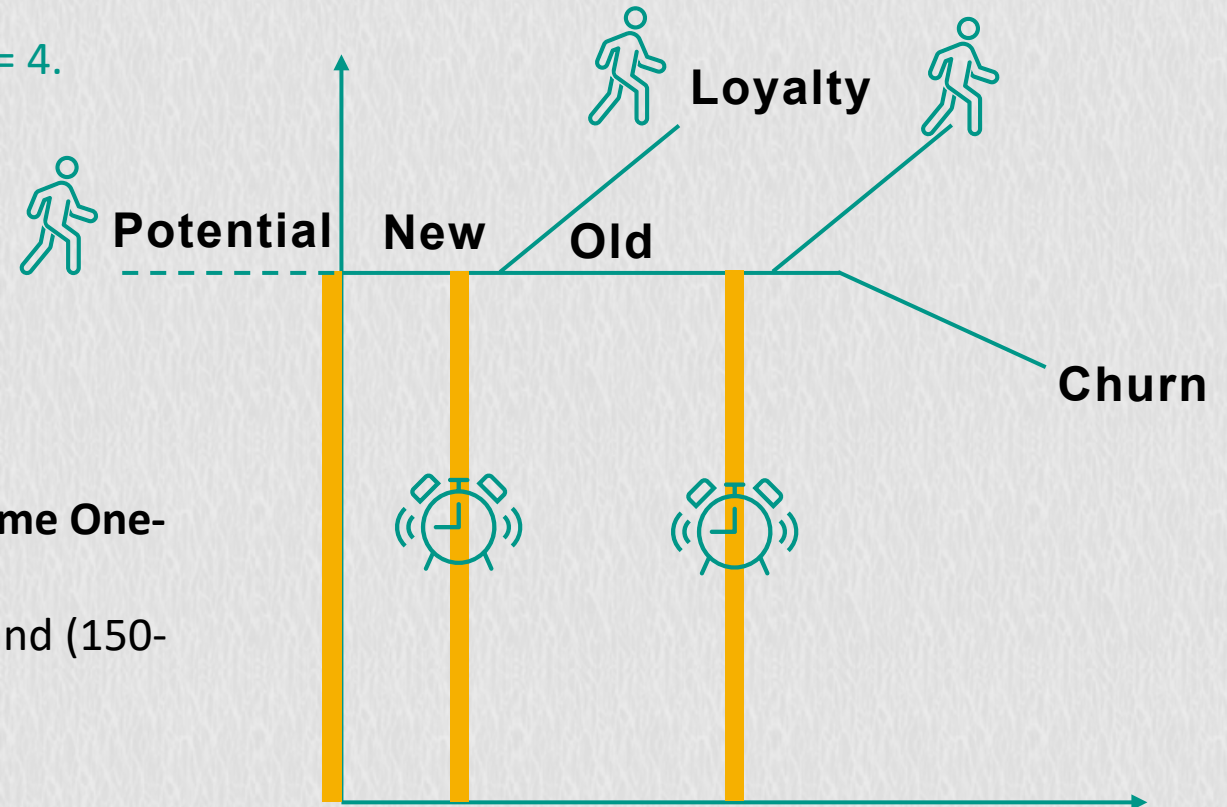
For Potential Customer:

Who alr has products in their Shopping carts and may become One-time-purchaser

- If the system detected that their payment amount is around (150-200), try to push them buy more to > \$200
- Recommend bundle packages.

Pricing & Product Strategy :

- Provide bundle package set (Includes >4 produce wide)
- Price range focus on \$2 - \$5



THANK YOU

Yuan Yuan