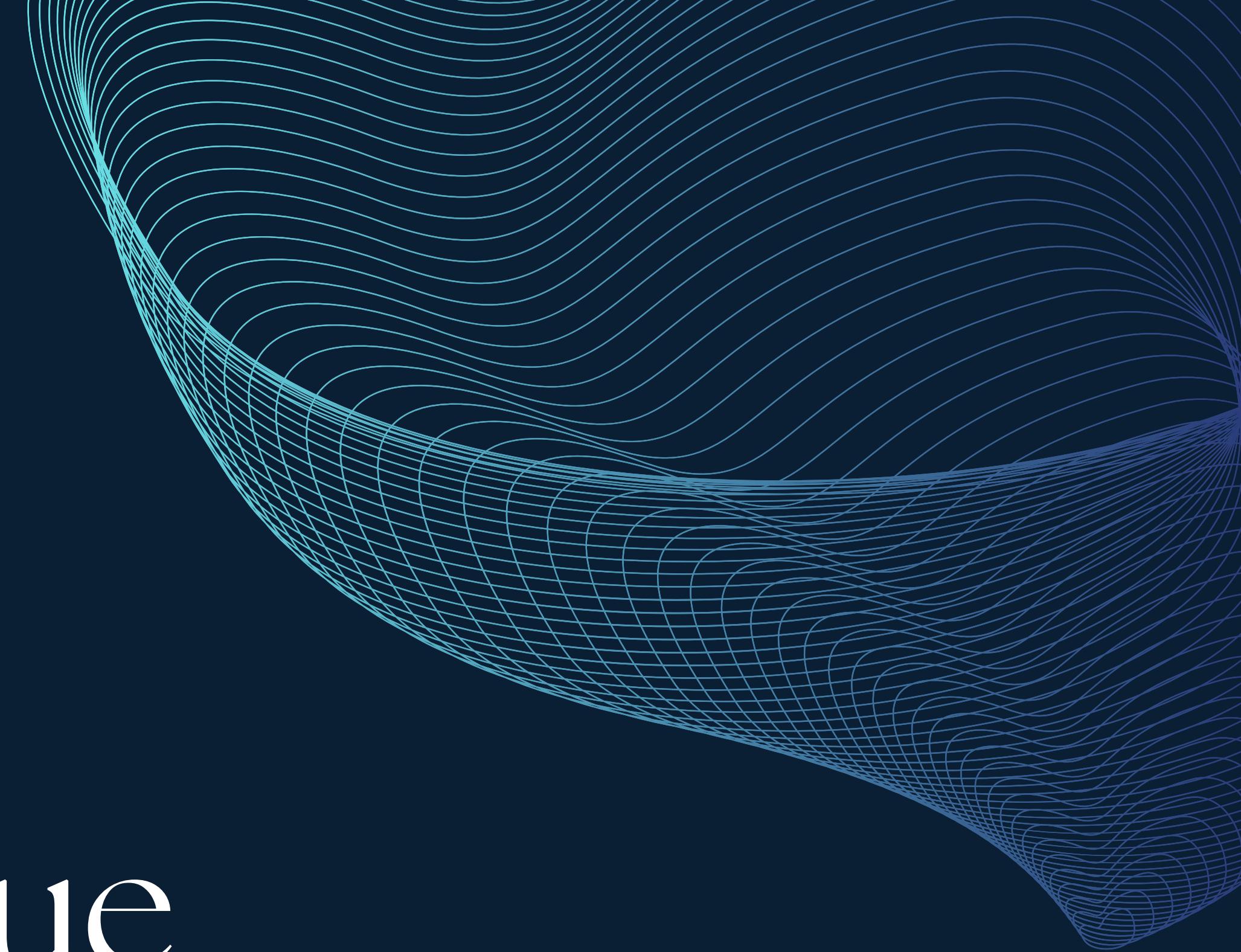


Final Project

Muhammad Nur Arifin

Customer Lifetime Value

How to put a price tag to the customers and the company



Agenda

[Click here for the script file.](#)

01 Executive Summary

02 Background

03 Exploration Data Analysis

04 Modelling Result

05 Recommendation

Let's start with a simple concept

What you spend Now

=

What you'll earn Later



Brief Background

in the record of consumer behavior there is a data containing the pattern of transactions. Transaction pattern analysis allows us to find out facts about how valuable existing customers are as well as predict their future



Objective

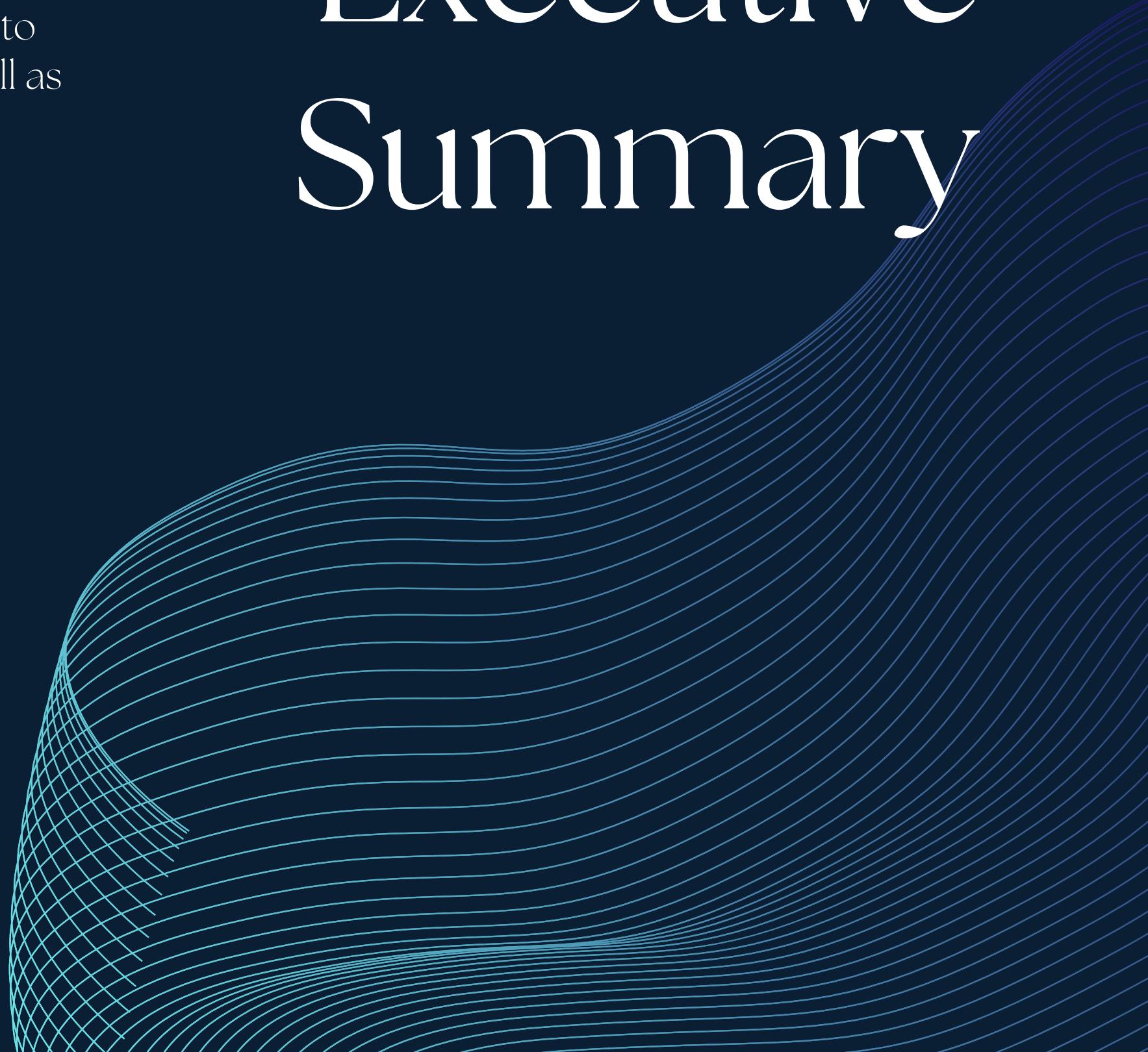
Valuing customer based on CLV model, Probability to Alive, predicting future purchases and spending values



Result Summary

- > 75% of existing customers will stay and there will be 1565 transactions in the next month.
- > The average profit generated by each customer is €415

Executive Summary



Why do we need to put a "price tag" on customers?

We can't give proper treatment unless knowing the customers are like.

Likewise, how good is the company's value from the customer side and the company's performance just by looking at customer profiles.

Widely implemented



Business Development



Marketing Strategy



Supply Chain Optimization

Dataset :

The dataset is [online retail](#) transaction data based in the UK. Main products offered are unique gift kits for all occasions

Data Period :

Data in [2010](#) with details from 01/12/2009 to 09/12/2011

Glimpse The Data:

417.534 rows, 8 columns.

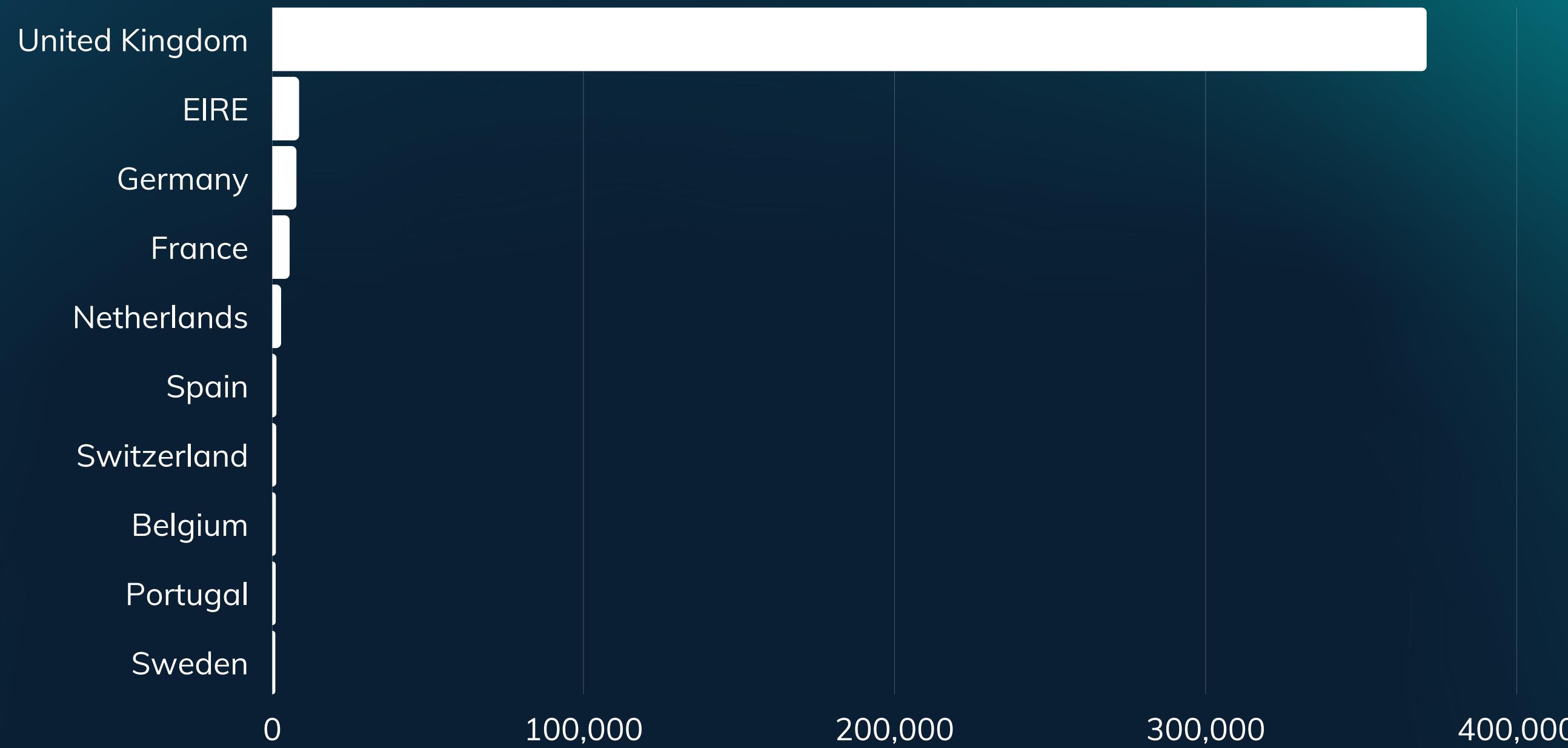
There are [4.312](#) customers who are the object of analysis

Exploratory Data Analysis

Total Transaction	Total Sales (GMV)	Total Profit
407.664	€ 8.832.003	€ 618.240
Purchase Frequencies	Repeat Rate	Churn Rate
94 Days	97 %	0.021 %

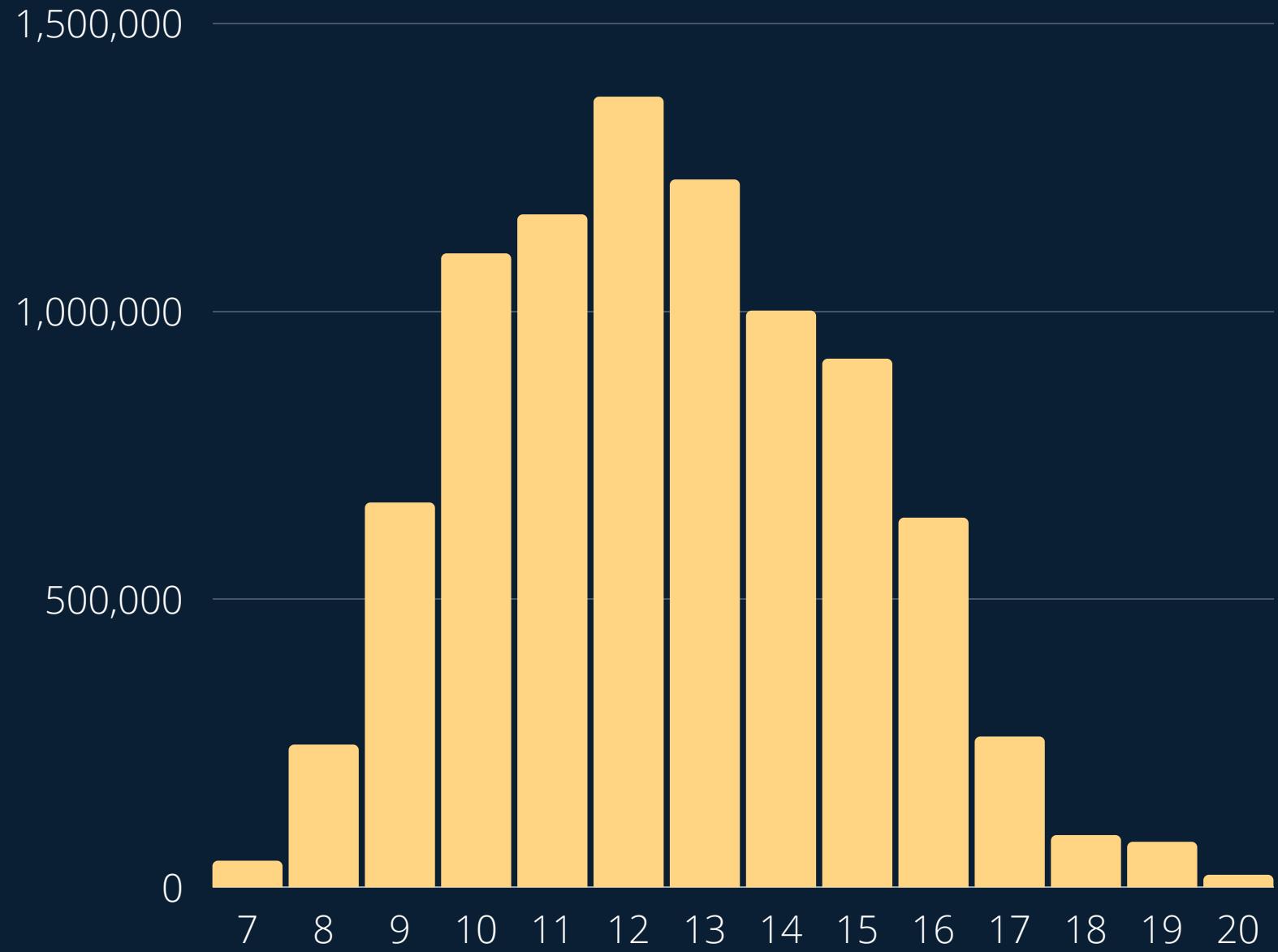
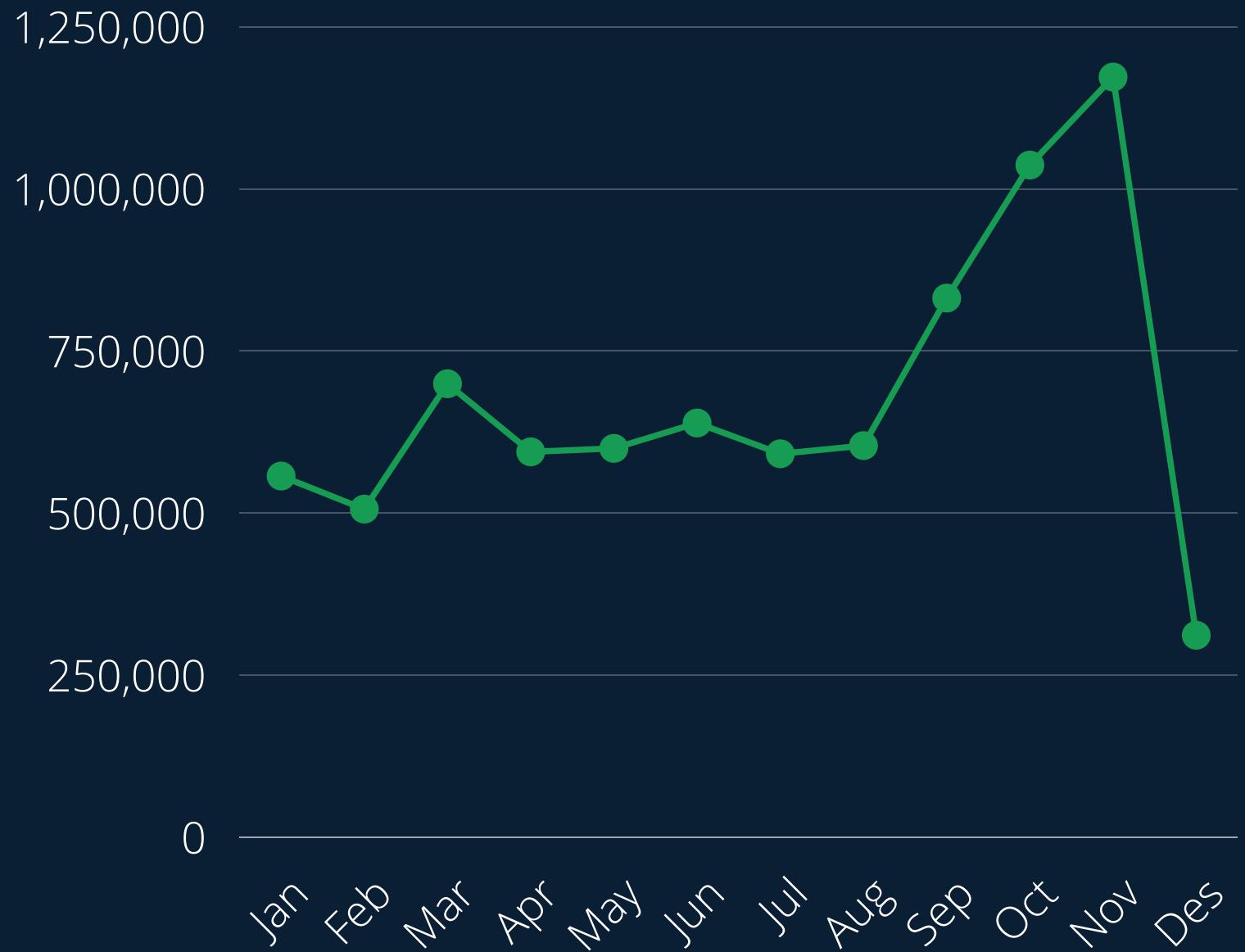
Exploratory Data Analysis

10 countries that generate the most revenue



Exploratory Data Analysis

The highest sales occurred towards the end of year
with the highest selling (> 1M) is between 10 am - 1 pm

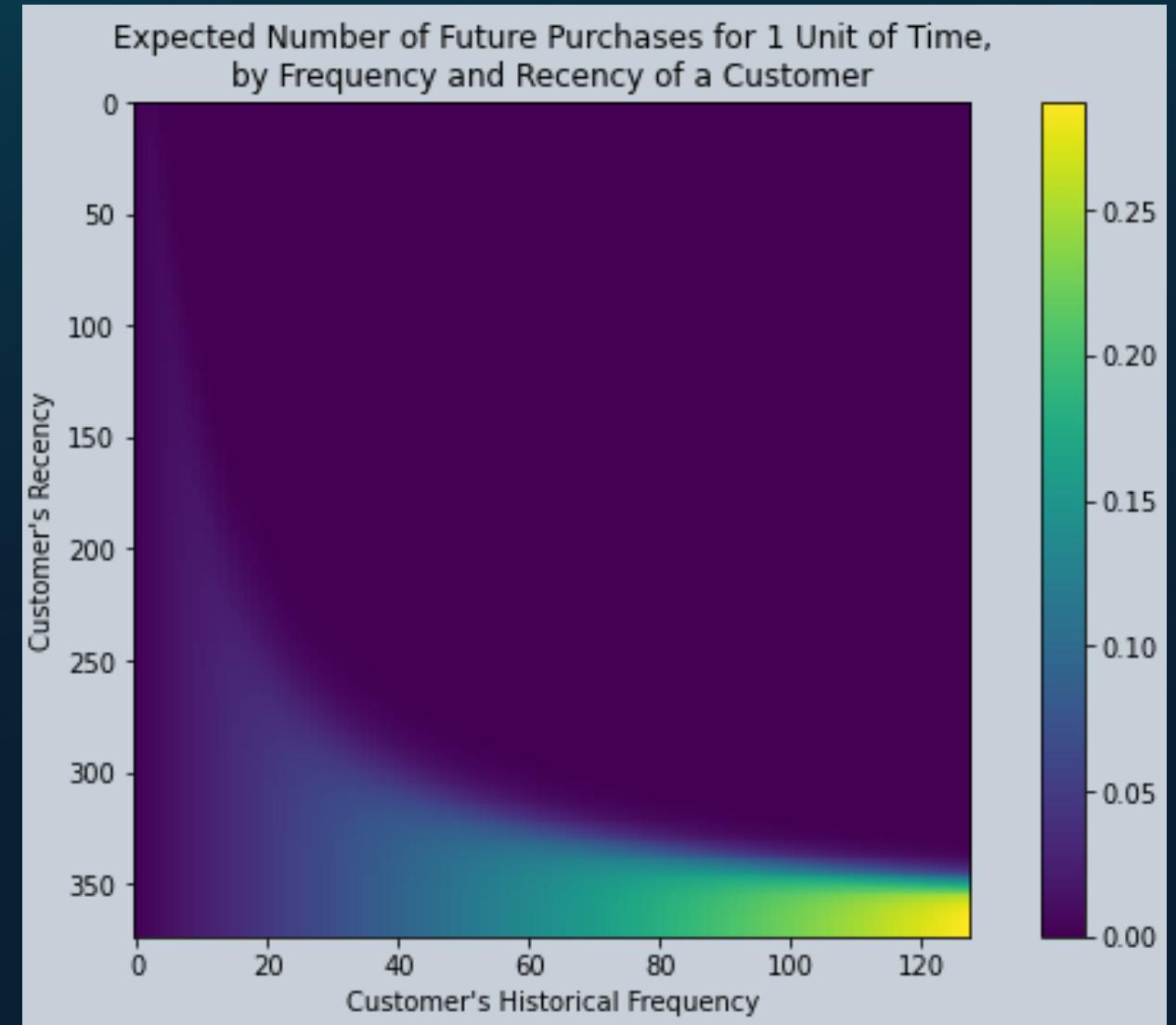


Modelling Result

Probability to Alive

If a customer had purchased multiple times (frequency) and the time between first & last transaction is high (recency), then his/her probability to being alive is high.

Similarly, if a customer has less frequency (only purchased once or twice) and the time between first & last transaction is low (recency), then his/her probability being alive is low.



25%	0.997509
50%	0.998383
75%	1.000000
max	1.000000



75% of existing customers
are predicted to stay alive

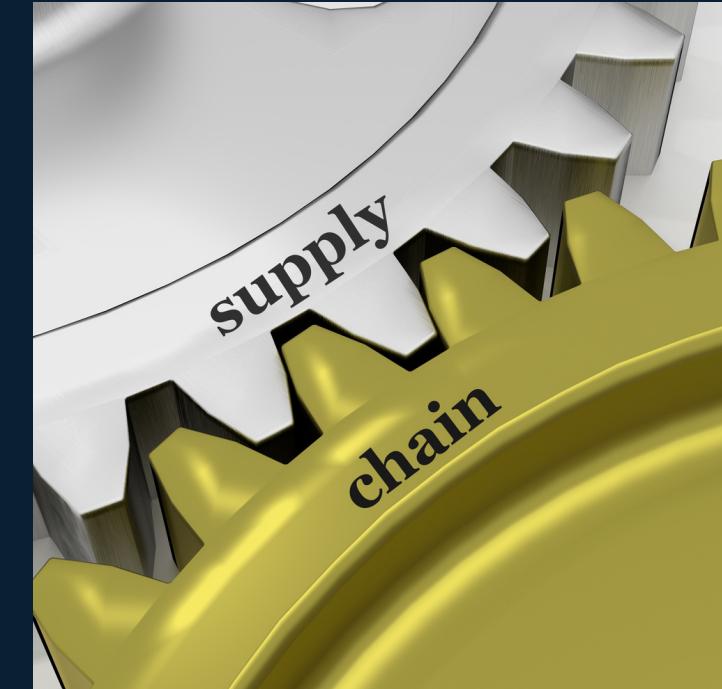
Expected Number of Purchases

At this stage, there are 577 customers who are predicted to make 1 purchase in the next period. Those belonging to this group are customers with purchases ≥ 1 time

While customers who are predicted to make purchases 2 times in the next period are customers who have made purchases ≥ 6 times

	frequency	recency	T	monetary_value	prob_alive	pred_num_txn
count	577.000000	577.000000	577.000000	577.000000	577.000000	577.000000
mean	8.339688	238.618718	256.216638	441.480030	0.995462	0.832478
std	4.497959	121.622339	122.921468	404.424247	0.023774	0.222565
min	1.000000	4.000000	6.000000	68.546000	0.496642	0.600000
25%	5.000000	132.000000	154.000000	236.848571	0.997617	0.670000
50%	8.000000	277.000000	308.000000	329.055000	0.998215	0.750000
75%	11.000000	351.000000	365.000000	480.611111	0.998525	0.940000
max	21.000000	372.000000	373.000000	4407.782778	0.998750	1.500000
	frequency	recency	T	monetary_value	prob_alive	pred_num_txn
count	43.000000	43.000000	43.000000	43.000000	43.000000	43.000000
mean	24.627907	309.279070	315.186047	645.125515	0.992666	1.944651
std	7.858945	95.179361	94.865884	709.599879	0.035475	0.294274
min	6.000000	35.000000	46.000000	133.470000	0.765741	1.610000
25%	22.500000	285.000000	290.000000	217.914545	0.998076	1.670000
50%	24.000000	362.000000	368.000000	478.332174	0.998503	1.920000
75%	30.000000	368.500000	371.000000	700.445217	0.998694	2.120000
max	36.000000	372.000000	373.000000	3505.892778	0.998790	2.500000

Recommendation



Marketing

Exp. Future Transaction	Recommendation
< 1	Increase his shopping desire
= 1	Providing a bundling package
> 1	Offer different products/services

Operational Optimization

- Strengthen supply chain by high buying countries
- Research possibilities to build warehousing points to increase customer satisfaction

Business Development

Europe's middle class in 2030 is predicted to decline from 20% to 14%. Aware of the bifurcation trend to get the best price positioning for the company

75 % consumer tried a new shopping behavior. So, innovate in shopping methods

Conclusion:

"The retailers who will succeed in the market are those who understand the financial situation of their consumers and then offer a value proposition that aligns with their needs."