

Customer Retention Analysis

Benjamin Åstrand
2023-04-03

Agenda

Methodology

Exploratory Data Analysis

Customer Churn Prediction

Next Steps

Agenda



Methodology

Exploratory Data Analysis

Customer Churn Prediction

Next Steps

Methodology | EDA is a natural first step to determine appropriate analysis

4

The client can increase revenue in 3 different ways



Acquire new customers



Upselling & cross-selling to existing customers



Increase customer retention



Exploratory Data Analysis

- Generate **plots and histograms** of customer behaviour
- **Analyse trends** in customer behaviour

- Discover customer trends and gain **better understanding of dataset**
- Determine **which analysis would be appropriate** and has **potential to create value**

Methodology | EDA is a natural first step to determine appropriate analysis

5

The client can increase revenue in 3 different ways



Acquire new customers



Upselling & cross-selling to existing customers



Increase customer retention



Exploratory Data Analysis

- Generate **plots and histograms** of customer behaviour
- **Analyse trends** in customer behaviour

- Discover customer trends and gain **better understanding of dataset**
- Determine **which analysis would be appropriate** and has **potential to create value**

Agenda

Methodology

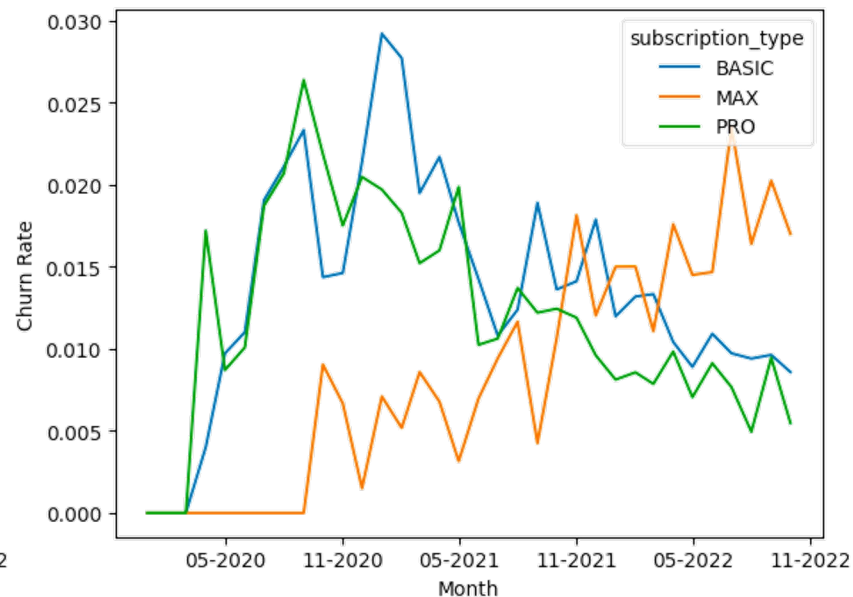
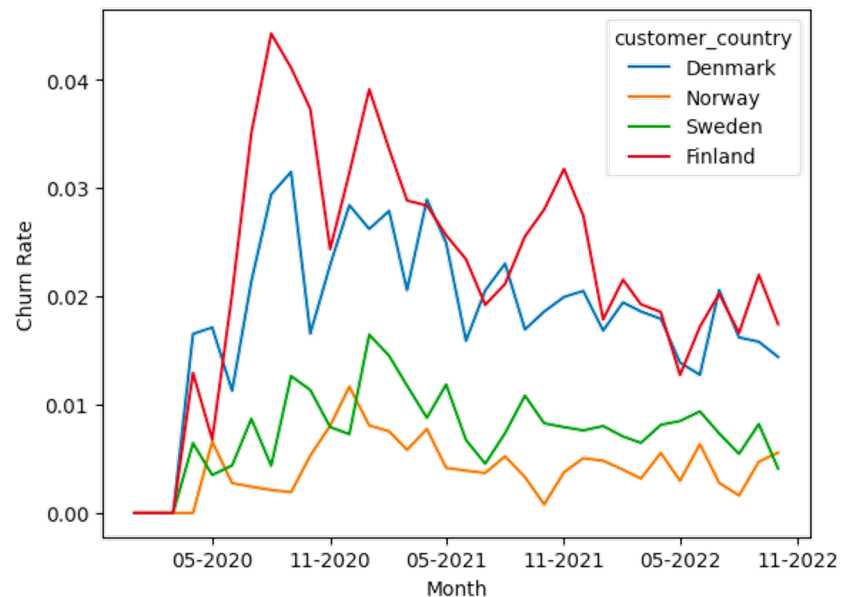


Exploratory Data Analysis

Customer Churn Prediction

Next Steps

Exploratory Data Analysis | Identified trends indicate potential value of performing customer churn analysis



Key takeaways



- Churn rate is approximately 2x higher in Finland and Denmark compared to Sweden and Norway
- Upwards trend of churn rate among MAX customers since early 2021
- Further analysis of customer churn could give valuable insights and help increase customer retention

Agenda

Methodology

Exploratory Data Analysis



Customer Churn Prediction

Next Steps

Customer Churn Prediction | Prediction can be used to apply customer retention strategies and increase revenue growth

The dataset was modified...

	cust_id	transaction_type	transaction_date	subscription_type	subscription_price	customer_gender	age_group	customer_country	referral_type	
	0	1	initial	2020-09-01	BASIC	33	Male	35-44	Denmark	Google Ads
	1	2	initial	2022-03-01	BASIC	53	Female	18-24	Denmark	facebook
	2	3	initial	2020-10-01	MAX	99	Female	25-34	Norway	facebook
	3	3	REDUCTION	2022-02-01	BASIC	53	Female	25-34	Norway	facebook
	4	4	initial	2022-05-01	PRO	85	Male	18-24	Sweden	Display
	
	18101	10364	UPGRADE	2022-09-01	MAX	119	Female	45-54	Norway	facebook
	18102	10365	initial	2021-05-01	PRO	75	Male	55-65	Norway	Google Ads
	18103	10365	REDUCTION	2021-07-01	BASIC	43	Male	55-65	Norway	Google Ads
	18104	10366	initial	2021-01-01	BASIC	43	Male	18-24	Denmark	facebook
	18105	10366	CHURN	2022-02-01	BASIC	53	Male	18-24	Denmark	facebook



	cust_id	customer_gender	age_group	customer_country	subscription_type	days_as_customer	first_referral	total_expenses	churned	
	0	1	Male	35-44	Denmark	BASIC	851	Google Ads	891.0	False
	1	2	Female	18-24	Denmark	BASIC	305	facebook	477.0	False
	2	3	Female	25-34	Norway	BASIC	821	facebook	1584.0	False
	4	4	Male	18-24	Sweden	PRO	244	Display	595.0	False
	5	5	Male	35-44	Sweden	BASIC	152	Google Ads	212.0	False
	
18095	10362	Female	25-34	Denmark	BASIC	729	facebook	1125.0	False	
18098	10363	Female	18-24	Finland	BASIC	821	Google Ads	301.0	True	
18100	10364	Female	45-54	Norway	MAX	639	facebook	1275.0	False	
18102	10365	Male	55-65	Norway	BASIC	609	Google Ads	150.0	False	
18104	10366	Male	18-24	Denmark	BASIC	729	facebook	559.0	True	

...to enable predictive analysis

Predictions



- Simple logistic regression model gives **accuracy score > 75%**
- Testing **other models** might further improve performance
- Accuracy is **good enough to be useful** to the client



Customer Retention Strategies



- Leverage predictions to **implement appropriate customer retention strategies**, such as specialized offers and discounts
- Continually **track impact** of marketing efforts
- 5% increase in customer retention can **increase revenue by 25% - 95%**

Agenda

Methodology

Exploratory Data Analysis

Customer Churn Prediction



Next Steps



Next steps



Feature engineering

Perform further feature engineering to capture more information about customer history. Apply scaling/normalization



Test more ML models

Test performance of other classifiers and perform hyperparameter tuning to increase performance



Estimate profitability impact

Calculate CAC and cost of using ML model to estimate profitability impact of predicting customer churn



Implement customer retention strategies

Choose appropriate customer retention strategies such as specialized offers or discounts for customers who are likely to churn. Implement strategies to reduce customer churn



Thank you for your interest!

Questions?

Benjamin Åstrand
2023-04-03