Case Study: Classification

VaultBank

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(Risk Analysts)

CONTEXT

We are the Risk Analysis team at the VaultBank. The bank just launched a trial for a CC offer, and asked us to analyse the results to:

- ○ Narrow down the target audience, in order to:
- ○ Avoid spamming
- ○ Reduce cost (Offers are sent via postcard or letter)
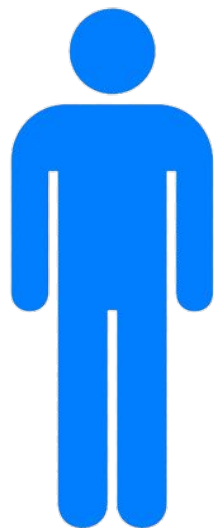
DATA

- **18.000** existing customers
- Timeframe: **1 year**
- Info about their **Assets** (balance, accounts, CCs, income, house owned)
- Info about their **Households**
- **Contact type** for offer (Letter/Postcard)

WHY is it important for us to have a better target audience?
⇒ Costs to send a letter/postcard(**€0.90**) to each client (**18000**) might outweigh the profit of this campaign.

Customers Insights | Visual data exploration

Our customers in a nutshell

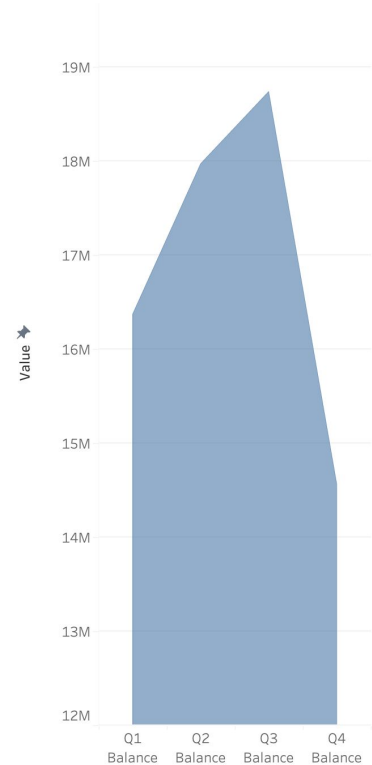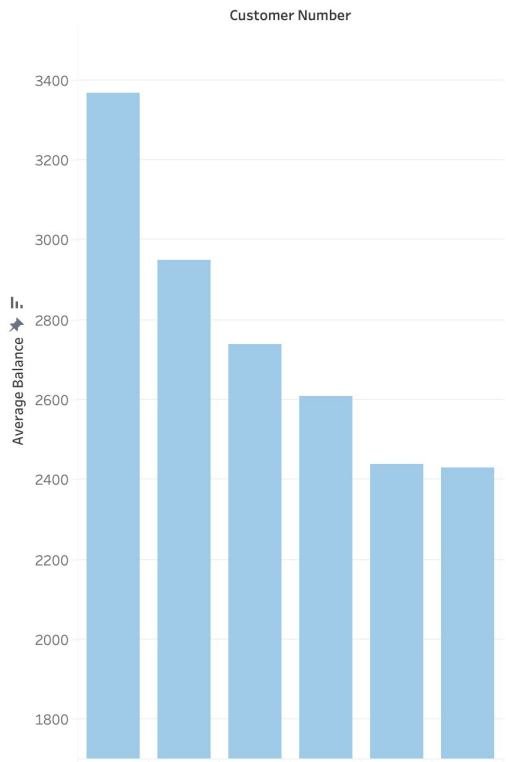|	
18.000	# Of Customers
940.5	AVG Balance
1.9	AVG of Credit Card held
1.2	AVG of Bank Accounts open

Customers Insights | Visual data exploration
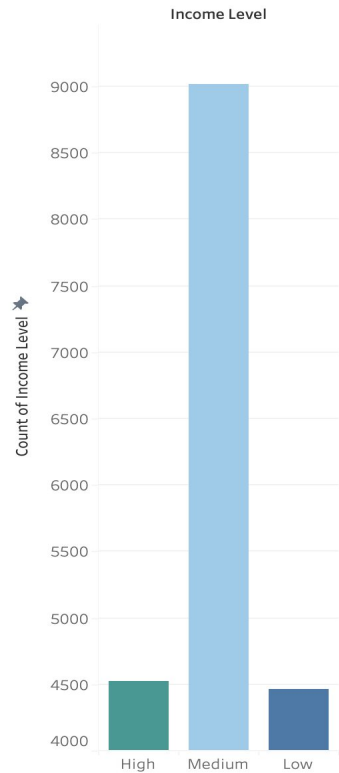
Monetary Insights

Q-Balance Development for 1 year (total)

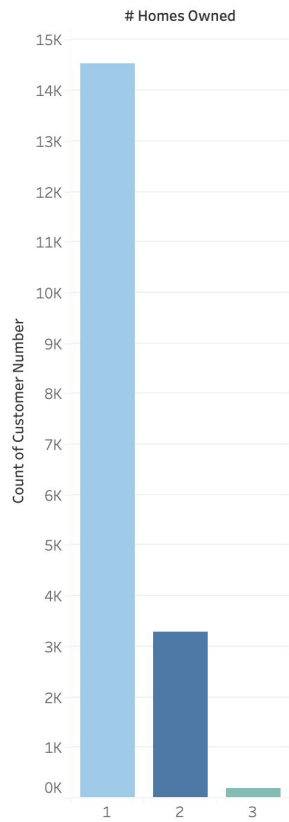Top 6 Accounts - AVG Balance

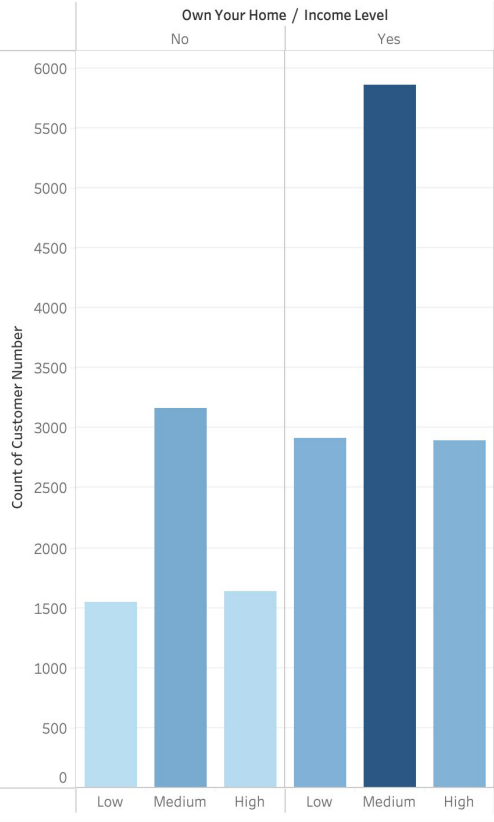Customers per Income Level

Customers Insights | Visual data exploration

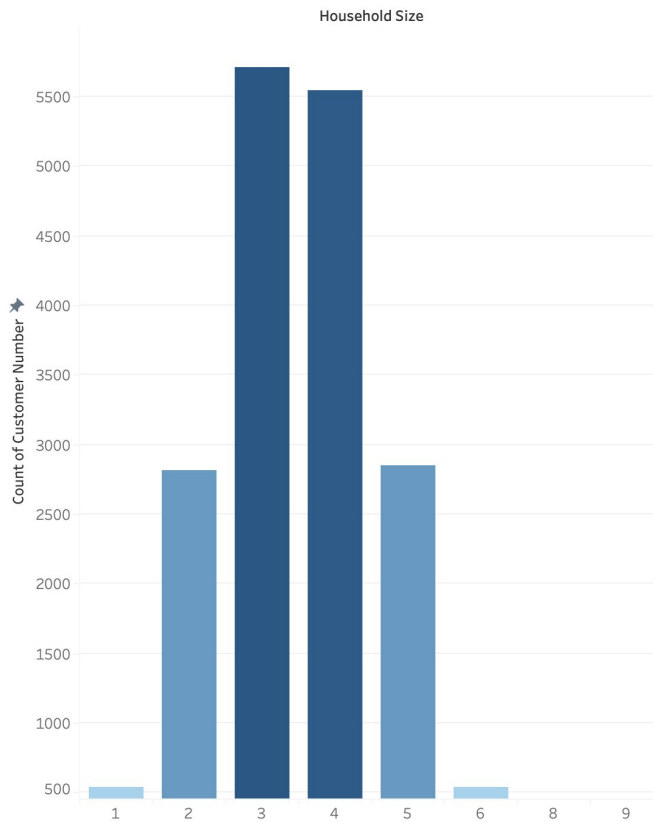## Our Customers and their Home | Household situation

of Homes Owned - all Customers

Relation Income Level <> Home Ownership

Customers per Household Size

What are the best conditions to accept the offer?

Credit Card Offer Accepted

No	Yes
94,32%	5,68%

	Income Level			Credit Rating			Mailer Type		Reward		
	Low	Medium	High	Low	Medium	High	Postcard	Letter	Air Miles	Cash Back	Points
No	91,30%	94,79%	96,35%	89,37%	95,46%	98,04%	92,10%	96,61%	92,33%	96,57%	94,07%
Yes	8,70%	5,21%	3,65%	10,63%	4,54%	1,96%	7,90%	3,39%	7,67%	3,43%	5,93%

From the Customer Analysis to Actionable Further Steps

Two main challenges:

1) Data attributes from our customers **do not carry very strong predictive power**
2) Data is strongly **biased** towards customers which have not accepted the credit card offer

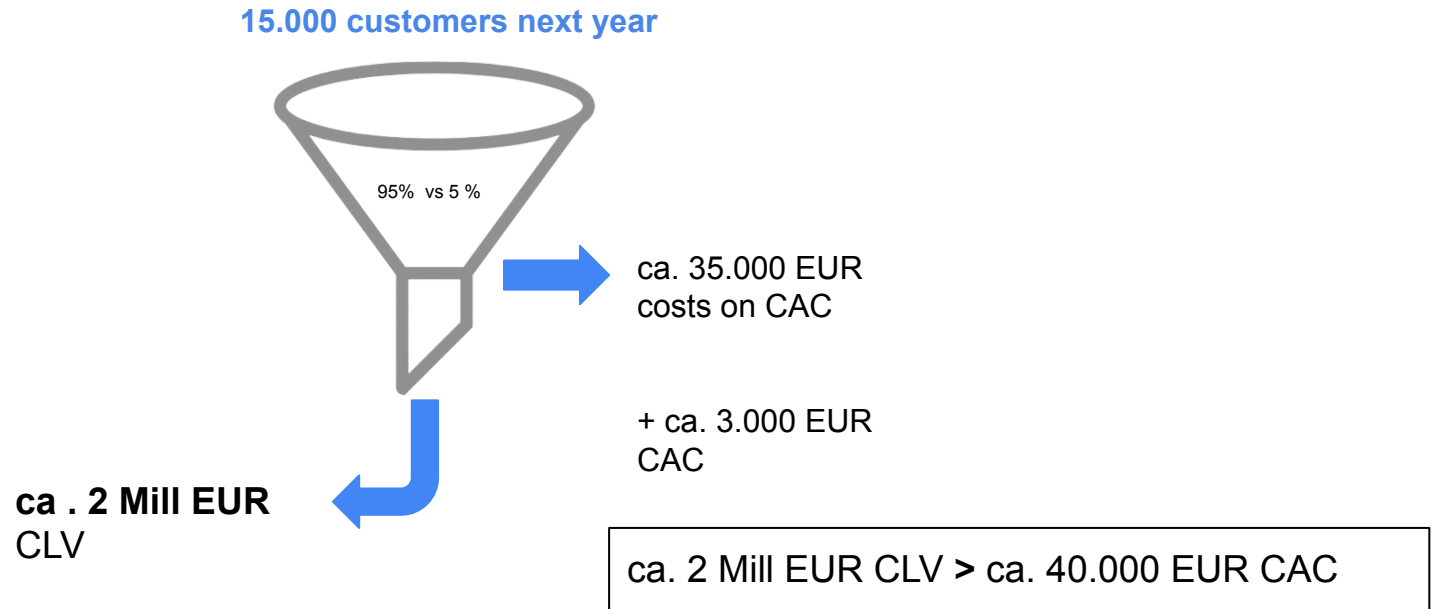Customer Data

Algorithmic approach to customer classification

Data Processing

…

Classification

Insight if customer will accept credit card offer

Effectiveness

will catch **97% of YES** customers

will let through **70% of NO** customers

Example of Model Effectiveness

Current costs for a Credit Card Customer:

- **CAC (Customer Acquistion Cost): 3.45 EUR**
- **CLV (Customer Lifetime Value): 2.800 EUR**

15.000 customers next year

95% vs 5 %

ca. 35.000 EUR
costs on CAC

+ ca. 3.000 EUR
CAC

ca . 2 Mill EUR
CLV

ca. 2 Mill EUR CLV **>** ca. 40.000 EUR CAC

Next Steps / Outlook

- **Run model** on a smaller dataset **to verify business value add**

- **Automate and enrich** further our **data collection** on customers so that additional information can be incorporated into running model

- Business Development:
    - potential **partnership with Air Miles** Reward
    - use 'Postcard' as the main distribution channel

Thank you for your attention

Questions?