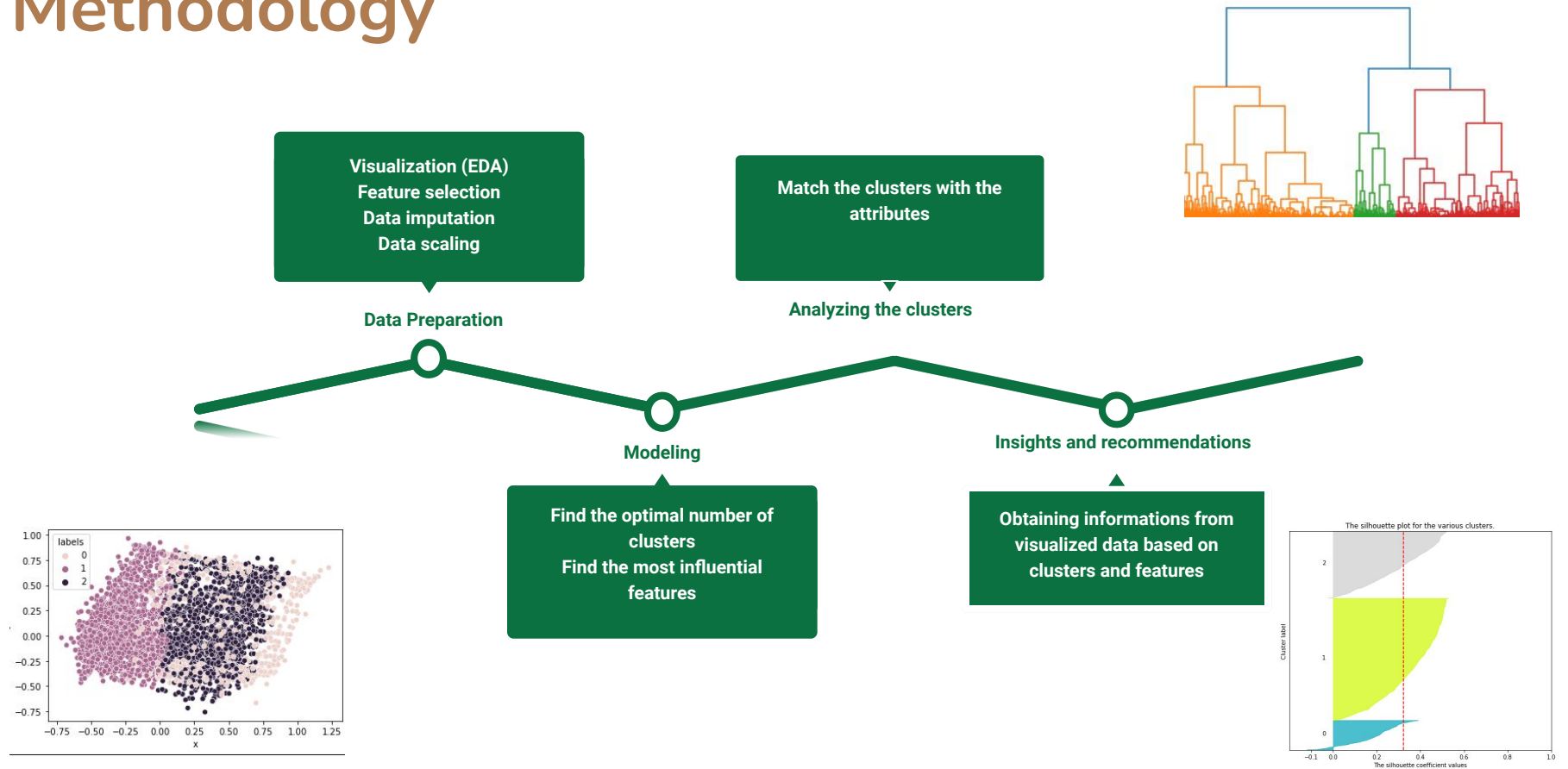# Customer Segmentation

Credit card transactions

Data Explanation

- Credit card customers
- Frequency of purchases and payments
- Installment vs full payment choices
- Cash advances
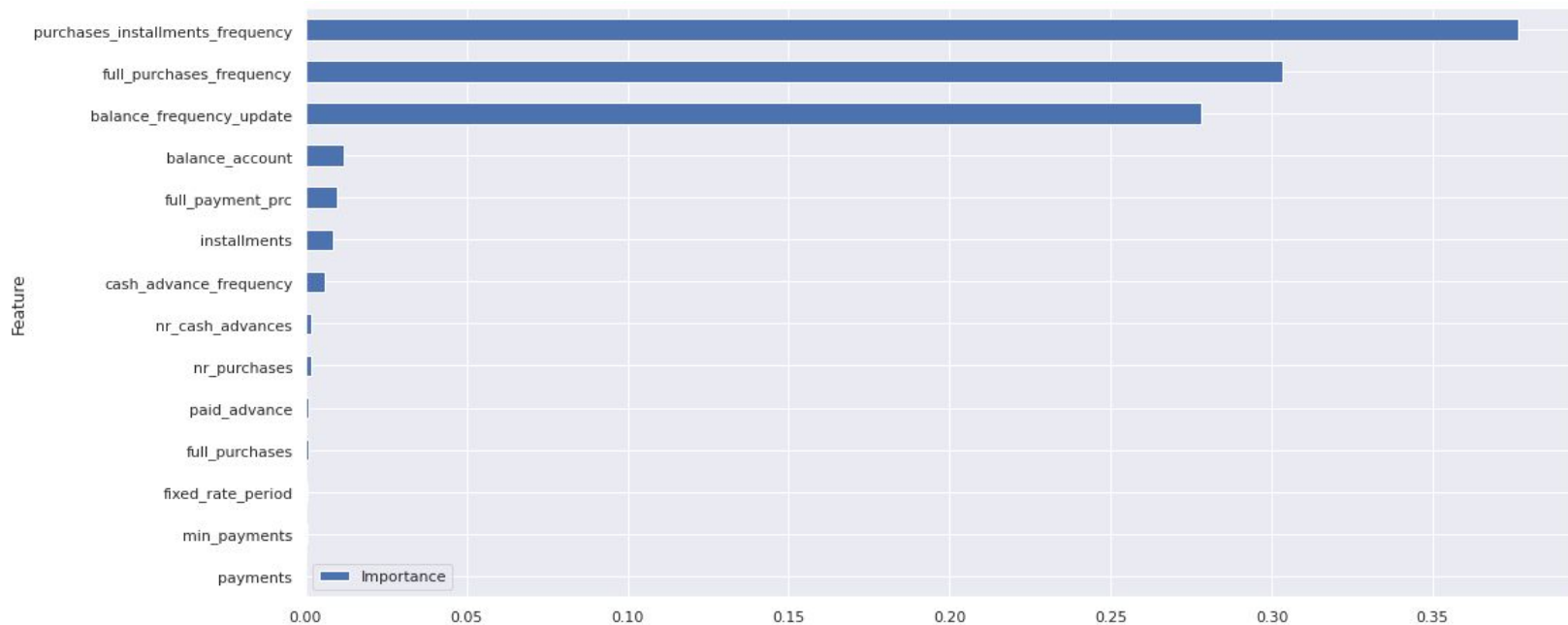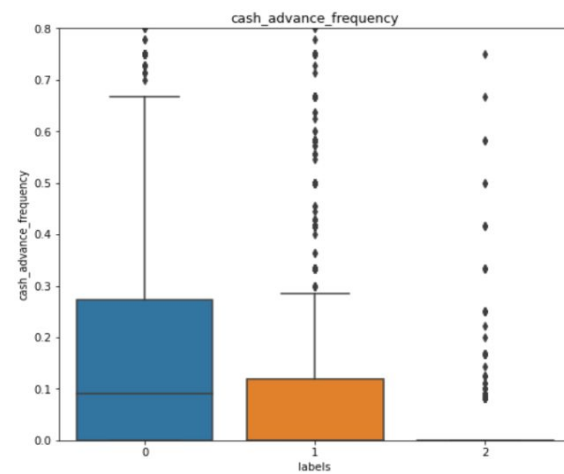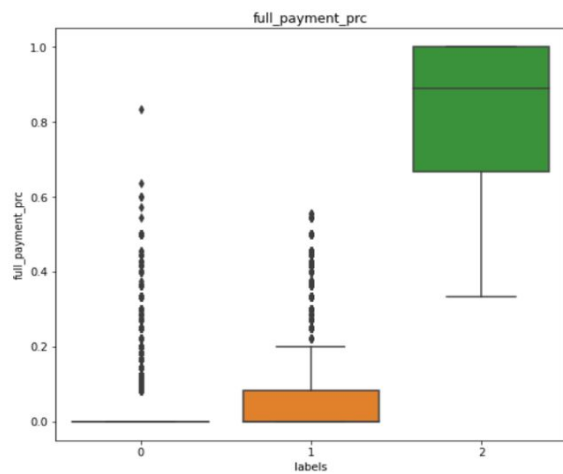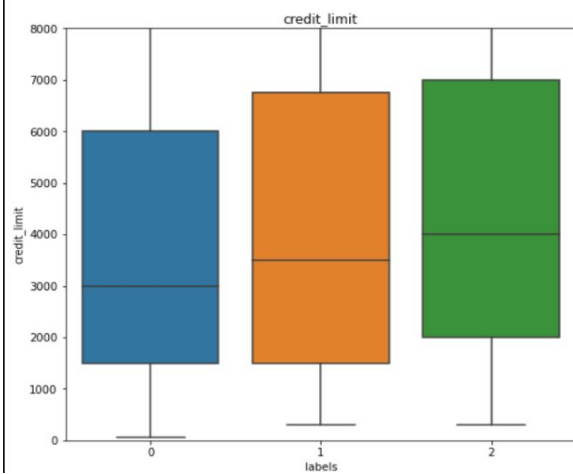- 8500 clients
- 17 features

	balance_frequency_update	full_purchases_frequency	purchases_installments_frequency	cash_advance_frequency	full_payment_prc	balance_account	paid_advance	full_purchases	installments	nr_cash_advances	nr_purchases	credit_limit	fixed_rate_period	payments
full_purchases_frequency	0.2													
purchases_installments_frequency	0.18	0.14												
cash_advance_frequency	0.19	-0.11	-0.26											
full_payment_prc	-0.094	0.16	0.25	-0.25										
balance_account	0.32	0.074	-0.061	0.45	-0.32									
paid_advance	0.1	-0.087	-0.18	0.63	-0.15	0.49								
full_purchases	0.1	0.52	0.13	-0.082	0.13	0.17	-0.03							
installments	0.12	0.22	0.51	-0.13	0.18	0.13	-0.065	0.34						
nr_cash_advances	0.14	-0.069	-0.17	0.8	-0.17	0.38	0.66	-0.046	-0.073					
nr_purchases	0.19	0.54	0.53	-0.13	0.16	0.16	-0.074	0.54	0.63	-0.065				
credit_limit	0.099	0.29	0.061	0.14	0.046	0.54	0.31	0.32	0.26	0.15	0.27			
fixed_rate_period	0.12	0.083	0.071	-0.13	-0.02	0.075	-0.069	0.063	0.085	-0.043	0.12	0.14		
payments	0.063	0.24	0.085	0.18	0.11	0.32	0.45	0.58	0.39	0.25	0.37	0.42	0.11	
min_payments	0.14	-0.027	0.029	0.1	-0.13	0.4	0.14	0.051	0.13	0.11	0.098	0.13	0.061	0.13

Methodology

Visualization (EDA)
Feature selection
Data imputation
Data scaling

Data Preparation

Match the clusters with the attributes

Analyzing the clusters

Modeling

Find the optimal number of clusters
Find the most influential features

Insights and recommendations

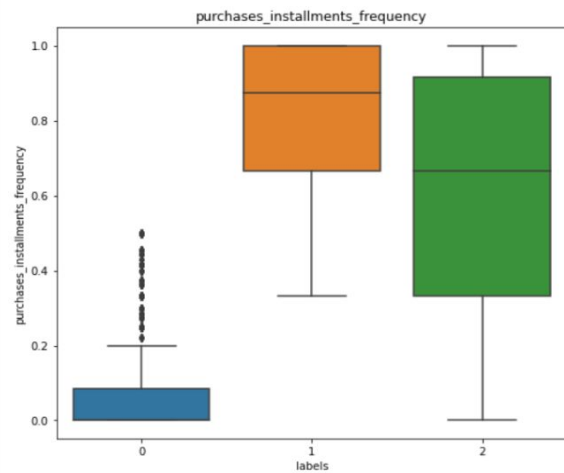**Obtaining informations from visualized data based on clusters and features**

Feature Importance

Top three features explaining 95 percent of customer segmentation
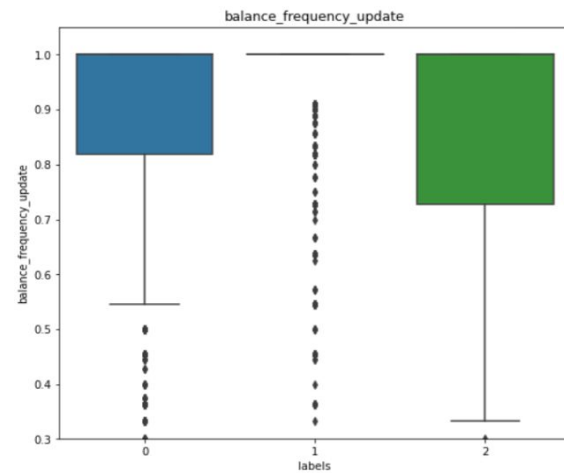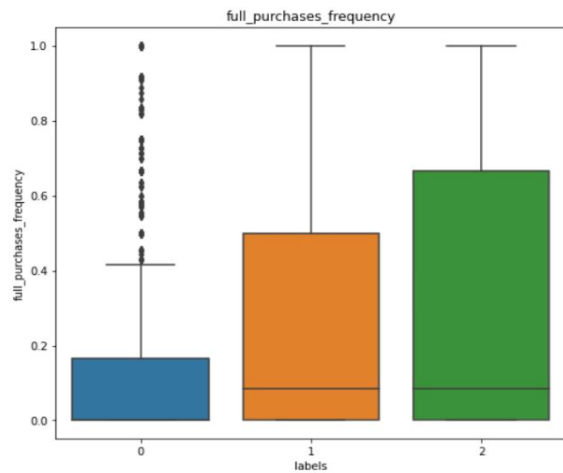
Insights

	Base Clients 56%	Intermediate Clients 32%	Upper Clients 12%
Installments	Low	Higher	Intermediate
Full payments	Low	Intermediate	High
Balance update	Intermediate	Low	High
Cash Advances	High	Intermediate	Low
Avg. Credit limit	3000	3500	4000

Recommendations

€ **Short term cash loans to base clients for their liquidity needs**

$ **Consumer loans to intermediate clients due to spending behavior in installments**

£ **Premium credit cards for upper clients to enhance loyalty**