

A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. Some nodes are highlighted with blue circles, and others with blue dots. The lines are thin and gray, creating a mesh-like structure.

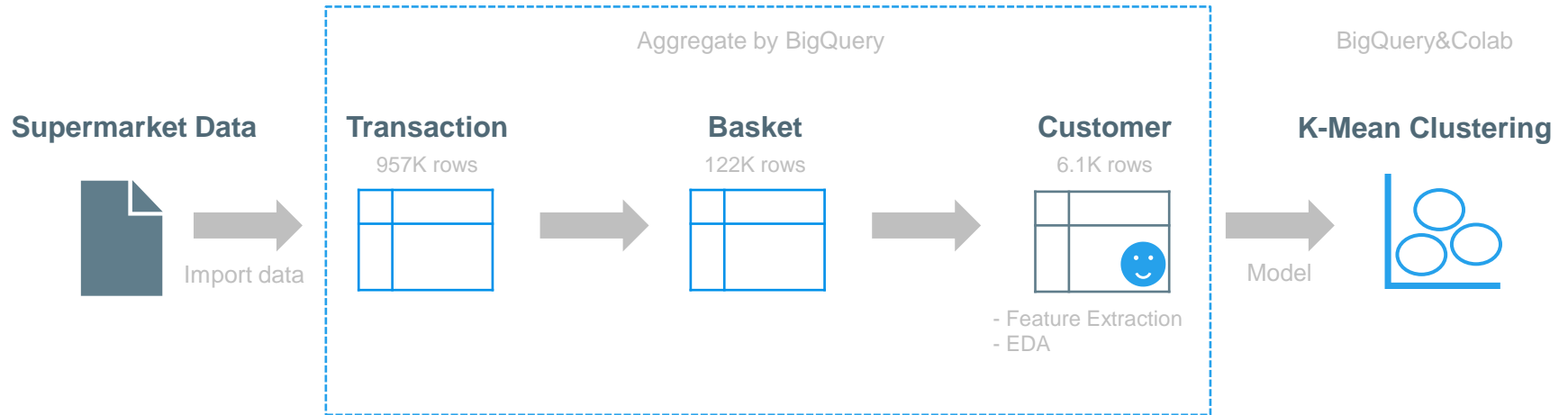
Homework 06

Customer Segmentation

BADS7105 CRM Analytics and Intelligence
Korrapin Pimapsri

A decorative network diagram in the bottom-right corner, similar to the one in the top-left, featuring a complex web of interconnected nodes and lines. Some nodes are highlighted with blue circles, and others with blue dots. The lines are thin and gray, creating a mesh-like structure.

Process Flow



Feature Extraction

Customer

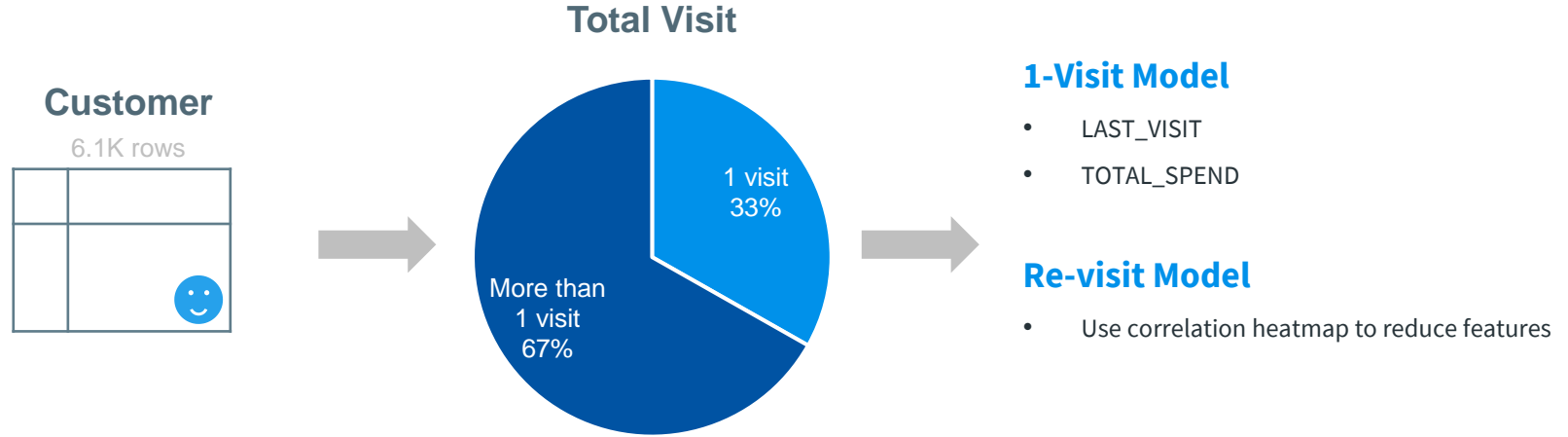
6.1K rows



→
4 groups
30 features

Group	Feature	Description
RFM	TOTAL_VISIT	Total visit
	TOTAL_SPEND	Total spending
	AVG_VISIT_PER_MONTH	Average visit per month
	AVG_SPEND	Average spending per time
	LAST_VISIT	No of month between last visit and today
	AGE	No of month between first visit and last visit
Daytime	PROB_WEEKEND	Probability to visit on daytime
	PROB_WEEKDAY	
	PROB_MORNING	
	PROB_AFTERNOON	
	PROB_EVENING	
Purchased behavior	PROB_BAS_L	Probability of basket size (L=Large, M=Medium, S=Small)
	PROB_BAS_M	
	PROB_BAS_S	
	PROB_BAS_PRICE_LA	Probability of basket price sensitivity (LA=Less Affluent, MM=Mid Market, UM=Up Market)
	PROB_BAS_PRICE_MM	
	PROB_BAS_PRICE_UM	
	PROB_BAS_DOMI_FRESH	Probability of shopping dominant mission
	PROB_BAS_DOMI_GROCERY	
	PROB_BAS_DOMI_MIXED	
Customer behavior	PROB_BAS_DOMI_NONFOOD	Customer's Price Sensitivity
	CUS_PRICE_LA	
	CUS_PRICE_MM	
	CUS_PRICE_UM	Customer's Lifestage (OA=Oder Adults, OF=Older Families, OT=Other, PE=Pensioners, YA=Young Adults, YF=Young Families)
	CUS_LIFE_OA	
	CUS_LIFE_OF	
	CUS_LIFE_OT	
	CUS_LIFE_PE	
	CUS_LIFE_YA	
	CUS_LIFE_YF	

EDA

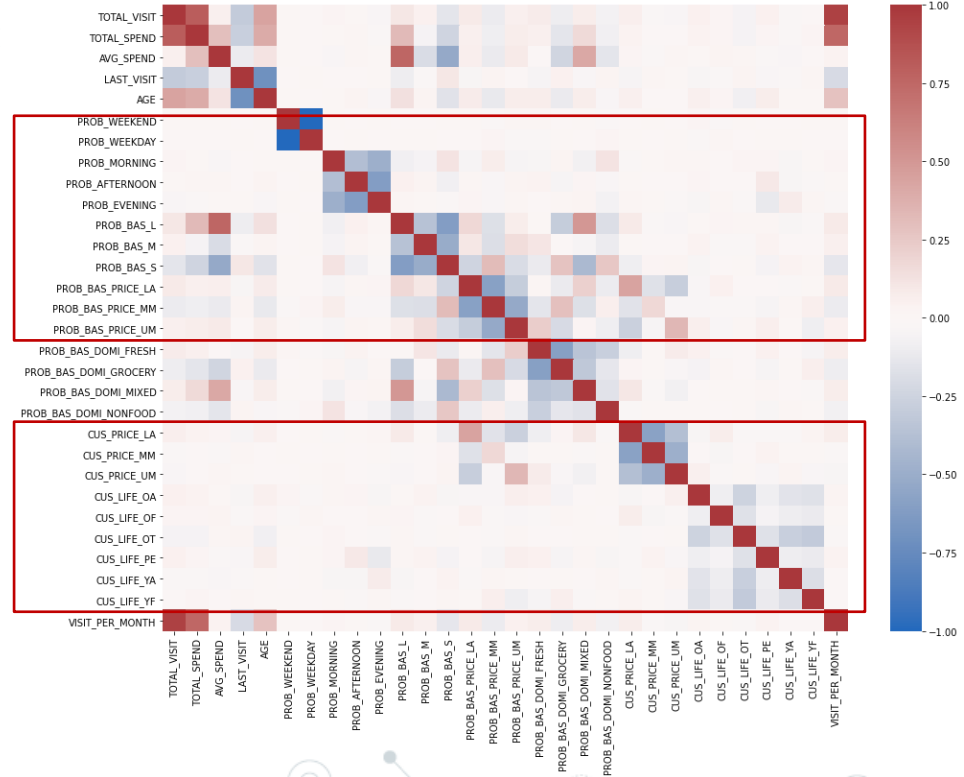


EDA : Re-visit Model

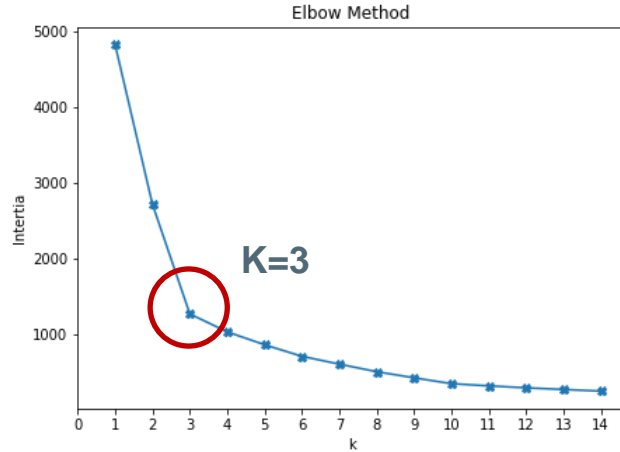
- Remove low correlation & duplicate feature

Shopping Dominant mission

RFM



K-Mean Clustering : 1-visit Model



Metrics

Davies-Bouldin index	0.7666
Mean squared distance	0.6246

Numeric features

This table shows the centroid value for each feature. Use the select menu to view more numeric features.

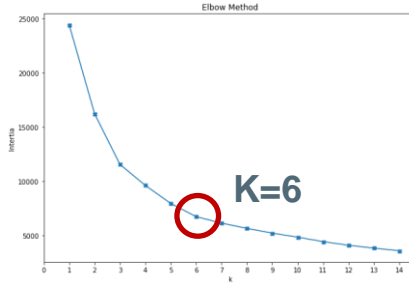
Selected Features

LAST_VISIT, TOTAL_SPEND

Centroid Id	Count	LAST_VISIT	TOTAL_SPEND
1	924	21.7316	5.2865
2	961	9.2664	4.9601
3	140	15.0571	52.2992

K-Mean Clustering : Re-visit Model

RFM



Numeric features

This table shows the centroid value for each feature. Use the select menu to view more numeric features.

Selected Features
AGE, AVG_SPEND, AVG_VISIT_PER_MONTH, LAST_VISIT, TOTAL_SPEND, TOTAL_VISIT

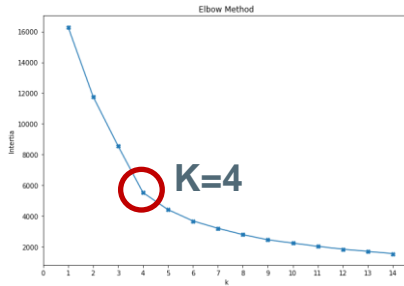
Centroid Id	Count	AGE	AVG_SPEND	AVG_VISIT_PER_MONTH	LAST_VISIT	TOTAL_SPEND	TOTAL_VISIT
1	1,000	8.3410	6.8203	0.7255	5.0820	35.9488	4.8160
2	454	25.2643	14.3659	4.1302	0.5242	1,350.5752	102.3260
3	136	26.4265	13.3368	10.6244	0.1471	3,350.1233	280.0662
4	588	4.0476	7.9384	0.8807	17.6480	26.5430	3.1207
5	1,577	22.0450	7.8951	0.6879	1.8269	131.8390	15.7077
6	320	18.0031	38.7650	0.7522	2.9156	486.3008	13.0813

Metrics

Davies-Bouldin index 1.1048

Mean squared distance 1.664

Shopping
Dominant
Mission



Numeric features

This table shows the centroid value for each feature. Use the select menu to view more numeric features.

Selected Features
PROB_BAS_DOMI_FRESH, PROB_BAS_DOMI_GROCERY, PROB_BAS_DOMI_MIXED...

Centroid Id	Count	PROB_BAS_DOMI_FRESH	PROB_BAS_DOMI_GROCERY	PROB_BAS_DOMI_MIXED	PROB_BAS_DOMI_NONFOOD
1	839	0.1964	0.7046	0.0550	0.0291
2	1,098	0.2990	0.1475	0.5079	0.0356
3	285	0.1961	0.1321	0.0885	0.5723
4	1,853	0.7152	0.1086	0.1212	0.0360

Metrics

Davies-Bouldin index 0.9227

Mean squared distance 1.3592


Interpreting Result : 1-visit Model

High spending Visitors	131 of customers (2.1% of base) 3 rd lowest total revenue 0.5% revenue contribution High Recency Highest spending per time
	Special campaign by occasion

Visitors	966 of customers (15.8% of base) Lowest total revenue 0.3% revenue contribution High Recency Low spending per time
	Special campaign by occasion

Let them go	928 of customers (15.2% of base) Lowest total revenue 0.3% revenue contribution Highest Recency (Last visit 2 years ago) Low spending per time

Interpreting Result : Re-visit Model

 Champion	107 of customers (1.7% of base)	Average spending per time
	2 nd highest total revenue 25% revenue contribution	Lowest Recency Avg visit 3 times per week
	More than 2 years relationship	Basket dominant mission 67% Fresh 26% Mixed
Maintain, Offer VIP privilege to maintain frequency		

Loyalist	418 of customers (6.9% of base)	Average spending per time
	Highest total revenue 43% revenue contribution	Lowest Recency Avg visit 1 times per week
	More than 2 years relationship	Basket dominant mission 63% Fresh 32% Mixed
Drive to Champion, Offer promotion to upsell or drive frequency		

Once a month	532 of customers (8.7% of base)	High spending per time
	3 rd highest total revenue 18% revenue contribution	Low Recency Avg visit 1 times per month
	More than 2 years relationship	Basket dominant mission 41% Fresh 52% Mixed
Maintain, Remind to visit every month		

Risk	309 of customers (5.1% of base)	High spending per time
	3% revenue contribution	Last visit 6 months ago Avg visit 1 times per month
	Less than 1 year relationship	Basket dominant mission 33% Fresh 55% Mixed
Remind to visit, Offer promotion with short period expired		

Economy Shopper	1,859 of customers (30.5% of base)	Low spending per time
	9% revenue contribution	Low Recency Avg visit 1 times per month
	1.5 years relationship	Basket dominant mission 51% Fresh 25% Grocery
Offer promotion for increase upsell/frequency		

Need Attention	853 of customers (14.0% of base)	Low spending per time
	1% revenue contribution	High Recency Avg visit 1 times per month
	Less than 6 months relationship	Basket dominant mission 33% Fresh 55% Mixed
Offer promotion for increase upsell/ frequency		