

TEAM 3

Customer Personality Analysis



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Wednesday, December 01, 2021

Team Project Assignment

Objective

Menunjukkan pola konsumsi customer terhadap produk perusahaan serta, menginformasikan jenis produk yang paling banyak terjual.



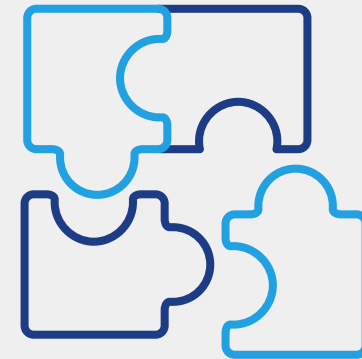
Methodology

Pengumpulan Data



- Data Diperoleh dari Kaggle

Merapihkan Data



- Data yang didapatkan dalam bentuk format CSV.
- Tipe Data Numerik & Teks.
- Tools: Python, Spreadsheet, Excel

Explorasi Data



- Proses diskusi team dan mencari hal menarik dari Data yang telah diolah.
- Menentukan tujuan yang dapat diselesaikan dengan data tersebut.
- Menambahkan dimensi baru dan sebagainya.

Visualisasi Data



- Melakukan visualisasi data melalui Google Data Studio



Data Preparation

`: main_df`

	ID	Year_Birth	Education	Marital_Status	Income	Kidhome	Teenhome	Dt_Customer	Recency	MntWines	...	NumWebVisitsMonth	AcceptedCmp3	AcceptedCmp4	AcceptedCmp5	AcceptedCmp1	AcceptedCmp2	Complain	Z_CostCo
0	5524	1957	Graduation	Single	58138.0	0	0	04-09-2012	58	635	...	7	0	0	0	0	0	0	0
1	2174	1954	Graduation	Single	46344.0	1	1	08-03-2014	38	11	...	5	0	0	0	0	0	0	0
2	4141	1965	Graduation	Together	71613.0	0	0	21-08-2013	26	426	...	4	0	0	0	0	0	0	0
3	6182	1984	Graduation	Together	26646.0	1	0	10-02-2014	26	11	...	6	0	0	0	0	0	0	0
4	5324	1981	PhD	Married	58293.0	1	0	19-01-2014	94	173	...	5	0	0	0	0	0	0	0
...
2235	10870	1967	Graduation	Married	61223.0	0	1	13-06-2013	46	709	...	5	0	0	0	0	0	0	0
2236	4001	1946	PhD	Together	64014.0	2	1	10-06-2014	56	406	...	7	0	0	0	1	0	0	0
2237	7270	1981	Graduation	Divorced	56981.0	0	0	25-01-2014	91	908	...	6	0	1	0	0	0	0	0
2238	8235	1956	Master	Together	69245.0	0	1	24-01-2014	8	428	...	3	0	0	0	0	0	0	0
2239	9405	1954	PhD	Married	52869.0	1	1	15-10-2012	40	84	...	7	0	0	0	0	0	0	0

- [Metode pengumpulan data](#) yang dilakukan secara Bottom-Up Approaches, yaitu dari data yang tersedia dilakukan eksplorasi lebih lanjut terkait masalah - masalah yang ditemukan.
- [Data Preparation](#) menggunakan Python sekaligus untuk memunculkan total spending, menambahkan columns baru, dan menghapus outlier.



Before

A1	▼	:	✕	✓	$\int x$	ID	Year_Birth	Education	Marital_Status	Income	Kidhome	Teenhome	Dt_Customer	Recency	MntWines	MntFruit
	A	B	C	D	E	F	G	H	I							
1	ID	Year_Birth	Education	Marital_Status	Income	Kidhome	Teenhome	Dt_Customer	Recency	MntWines	MntFruit					
2	5524	1957	Graduation	Single	58138000	4-09-2012	58635885	46172888	8381047000	0003111						
3	2174	1954	Graduation	Single	463441108	-03-2014	38111621	62112500	000003110							
4	4141	1965	Graduation	Together	716130021	-08-2013	26426491	2711121421	82104000	0003110						
5	6182	1984	Graduation	Together	266461010	-02-2014	2611420103	52204600	0000003110							
6	5324	1981	PhD	Married	582931019	-01-2014	4941734311	8462715553	650000003110							
7	7446	1967	Master	Together	625130109	-09-2013	1652042980	4214264106	00000003110							
8	9651	1971	Graduation	Divorced	556350113	-11-2012	3423565164	5049274737	600000003110							
9	6177	1985	PhD	Married	334541008	-05-2013	3276105631	2324048000	0003110							
10	4855	1974	PhD	Together	303511006	-06-2013	1914024332	13029000	000003111							
11	5899	1950	PhD	Together	564811113	-03-2014	6828061113	1100201000	0003110							
12	1994	1983	Graduation	Married	1015-11-2013	1155602111	10270000	0003110								
13	3871	1976	Basic	Married	75000013	-11-2012	5961611111	16120380	000003110							
14	2125	1959	Graduation	Divorced	630330015	-11-2013	8219461480	2251123013	482000003110							
15	8180	1952	Master	Divorced	593541115	-11-2013	5323325335	14361560	0000003110							
16	2569	1987	Graduation	Married	173230010	-10-2012	3831417615	11038000	0003110							
17	2114	1946	PhD	Single	828000024	-11-2012	2310062211	5596845176	1230011003111							
18	9736	1980	Graduation	Married	418501124	-12-2012	5153519213	43330380	0000003110							
19	4939	1946	Graduation	Together	377600031	-08-2012	2084538150	1228241670	0000003110							
20	6565	1949	Master	Married	769950128	-03-2013	9110128049	8016176211	4950001003110							
21	2278	1985	n Cycle	Single	338121003	-11-2012	8641719302	4392213600	0000003110							
22	9360	1982	Graduation	Married	370400008	-08-2012	4186273693	8481425800	0000003110							
23	5376	1979	Graduation	Married	24471006	-01-2013	4211172511	1150280100	000003110							
24	1993	1949	PhD	Married	586070123	-12-2012	6386708600	19323980	100003110							
25	4047	1954	PhD	Married	653240111	-01-2014	0384010221	3253629400	0000003110							
26	1409	1951	Graduation	Together	406890118	-03-2013	6927032739	6999771580	0000003110							
27	7892	1969	Graduation	Single	185890002	-01-2013	8964251512	1322137000	000003110							
28	2404	1976	Graduation	Married	533591127	-05-2013	4173430364	14514700	0000003110							
29	5255	1986	Graduation	Single	1020-02-2013	1951332633	6202700100	0000003110								

After

	Age	Education	Marital_Status	Income	Spending	Loyalty_Duration	Children	Recency	Wines	Fruits	...	NumWebVisitsMonth
0	57	Postgraduate	Alone	58138.0	1617	25.333333	0	58	635	88	...	
1	60	Postgraduate	Alone	46344.0	27	7.000000	2	38	11	1	...	
2	49	Postgraduate	In relationship	71613.0	776	13.633333	0	26	426	49	...	
3	30	Postgraduate	In relationship	26646.0	53	7.866667	1	26	11	4	...	
4	33	Postgraduate	In relationship	58293.0	422	8.600000	1	94	173	43	...	
...	
35	47	Postgraduate	In relationship	61223.0	1341	15.933333	1	46	709	43	...	
36	68	Postgraduate	In relationship	64014.0	444	3.866667	3	56	406	0	...	
37	33	Postgraduate	Alone	56981.0	1241	8.400000	0	91	908	48	...	
38	58	Postgraduate	In relationship	69245.0	843	8.433333	1	8	428	30	...	
39	60	Postgraduate	In relationship	52869.0	172	23.966667	2	40	84	3	...	
15 rows × 28 columns												

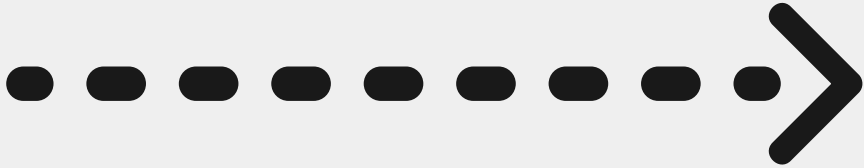


Columns List Before

- 'ID',
'Year_Birth',
'Education',
'Marital_Status',
'Income', '
Kidhome', '
Teenhome',
'Dt_Customer',
'Recency',
'MntWines'

MntFruits',
MntMeatProducts',
'MntFishProducts',
'MntSweetProducts',
'MntGoldProds',
'NumDealsPurchases',
'NumWebPurchases',
'NumCatalogPurchases',
'NumStorePurchases',
'NumWebVisitsMonth

'AcceptedCmp3',
'AcceptedCmp4',
'AcceptedCmp5',
'AcceptedCmp1',
'AcceptedCmp2',
'Complain',
'Z_CostContact',
'Z_Revenue',
'Response'



A1	ID	Year_Birth	Education	Marital_Status	Income	Kidhome	Teenhome	Dt_Customer	Recency	MntWines	MntFruits
1	ID	Year_Birth	Education	Marital_Status	Income	Kidhome	Teenhome	Dt_Customer	Recency	MntWines	MntFruits
2	55241957	Graduation	Single	581380004-09-2012	586358854617288883810470000003111						
3	21741954	Graduation	Single	463441108-03-2014	381116216211250000003110						
4	41411965	Graduation	Together	716130021-08-2013	264264912711121421821040000003110						
5	61821984	Graduation	Together	266461010-02-2014	26114201035220460000003110						
6	53241981	PhD	Married	582931019-01-2014	9417343118462715553650000003110						
7	74461967	Master	Together	625130109-09-2013	165204298042142641060000003110						
8	9651971	Graduation	Divorced	556350113-11-2012	3423565164504927473760000003110						
9	61771985	PhD	Married	334541008-05-2013	327610563123240480000003110						
10	48551974	PhD	Together	303511006-06-2013	1914024332130290000003111						
11	58991950	PhD	Together	56481113-03-2014	68280611131100201000003110						
12	19941983	Graduation	Married	1015-11-2013	11556021110270000003110						
13	3871976	Basic	Married	75000013-11-2012	596161111116120380000003110						
14	21251959	Graduation	Divorced	630330015-11-2013	821946148022511230134820000003110						
15	81801952	Master	Divorced	593541115-11-2013	532332533514361560000003110						
16	25691987	Graduation	Married	173230010-10-2012	3831417615110380000003110						
17	21141946	PhD	Single	828000024-11-2012	231006221155968451761230011003111						
18	97361980	Graduation	Married	418501124-12-2012	51535192134330380000003110						
19	49391946	Graduation	Together	377600031-08-2012	20845381501228241670000003110						
20	65651949	Master	Married	769950128-03-2013	911012804980161762114950001003110						
21	22781985	2n Cycle	Single	338121003-11-2012	8641719302439221360000003110						
22	93601982	Graduation	Married	370400008-08-2012	4186273693848142580000003110						
23	53761979	Graduation	Married	24471006-01-2013	4211172511115028010000003110						
24	19931949	PhD	Married	586070123-12-2012	638670860019323980100003110						
25	40471954	PhD	Married	653240111-01-2014	0384010221325362940000003110						
26	14091951	Graduation	Together	406890118-03-2013	6927032739699771580000003110						
27	78921969	Graduation	Single	185890002-01-2013	896425151213221370000003110						
28	24041976	Graduation	Married	533591127-05-2013	41734303641451470000003110						
29	52551986	Graduation	Single	1070-02-2013	1951332633620270010000003110						



Columns List After

Insert New Columns

- Age
- Spending
- Loyalty_Duration

Grouping Columns

Marital Status:

- Alone & In Relationship

Education:

- Undergraduate & Postgraduate

Customer Children:

- Kidhome & Teen Home -> Has Child

Rename & Delete Columns

- Produk Name
- Place
- Z CostContact
- Z Revenue

Age	Education	Marital_Status	Income	Spending	Loyalty_Duration	Children	Recency	Wines	Fruits	...	NumWebVisitsMonth
57	Postgraduate	Alone	58138.0	1617	25.333333	0	58	635	88	...	7
60	Postgraduate	Alone	46344.0	27	7.000000	2	38	11	1	...	5
49	Postgraduate	In relationship	71613.0	776	13.633333	0	26	426	49	...	4
30	Postgraduate	In relationship	26646.0	53	7.866667	1	26	11	4	...	6
33	Postgraduate	In relationship	58293.0	422	8.600000	1	94	173	43	...	5
...
47	Postgraduate	In relationship	61223.0	1341	15.933333	1	46	709	43	...	5
68	Postgraduate	In relationship	64014.0	444	3.866667	3	56	406	0	...	7
33	Postgraduate	Alone	56981.0	1241	8.400000	0	91	908	48	...	6
58	Postgraduate	In relationship	69245.0	843	8.433333	1	8	428	30	...	3
60	Postgraduate	In relationship	52869.0	172	23.966667	2	40	84	3	...	7



Segmentation

#Income Segmentation

- Low income, Low to medium income, Medium to high income, & High income
- [1730 -> 35284 -> 51373 -> 68487 -> 162397]

#Age Segmentation

- Young, Adult, Mature, Senior
- [0 - 29 - 45 - 65 - 121]

#Loyalty Segmentation

- New customers, Discovering customers, Experienced customers, Loyal customers

#Product Segmentation

- Non consumer, Low consumer, Frequent consumer, Biggest consumer



Scope

Ruang lingkup analysis dalam menentukan potential customer dan jenis produk yang paling banyak terjual. Dengan melihat perbandingan data berikut:

- Income
- Spending
- Loyalty Duration
- Product (Wines, Meat, Fruits, Sweets, Fish, Gold)

Kriteria potential customer dibagi menjadi 4 Grup:

Super Customers:

- HIGH INCOME (Income > 68.487),
- HIGH SPENDING (Spending > 1048) ,
- More than 1 year Customer (Loyalty_Duration > 15,06)

Rising Customers

- HIGH INCOME (Income > 68.487),
- HIGH SPENDING (Spending > 1048),
- Less than 1 year Customer (Loyalty_Duration < 15,06)

High Potential Customers:

- HIGH INCOME (Income > 68.487),
- LOW SPENDING (Spending < 1048),

2nd Customers:

- MID INCOME (Income < 35.284),
- HIGH SPENDING (Spending > 1048),



Data Visualitation

Total Pelanggan
2.215

Fish
83.397

Meat
370.045

Deals Purchase
5.145

Fruits
58.391

Sweets
59.895

Gold
97.415

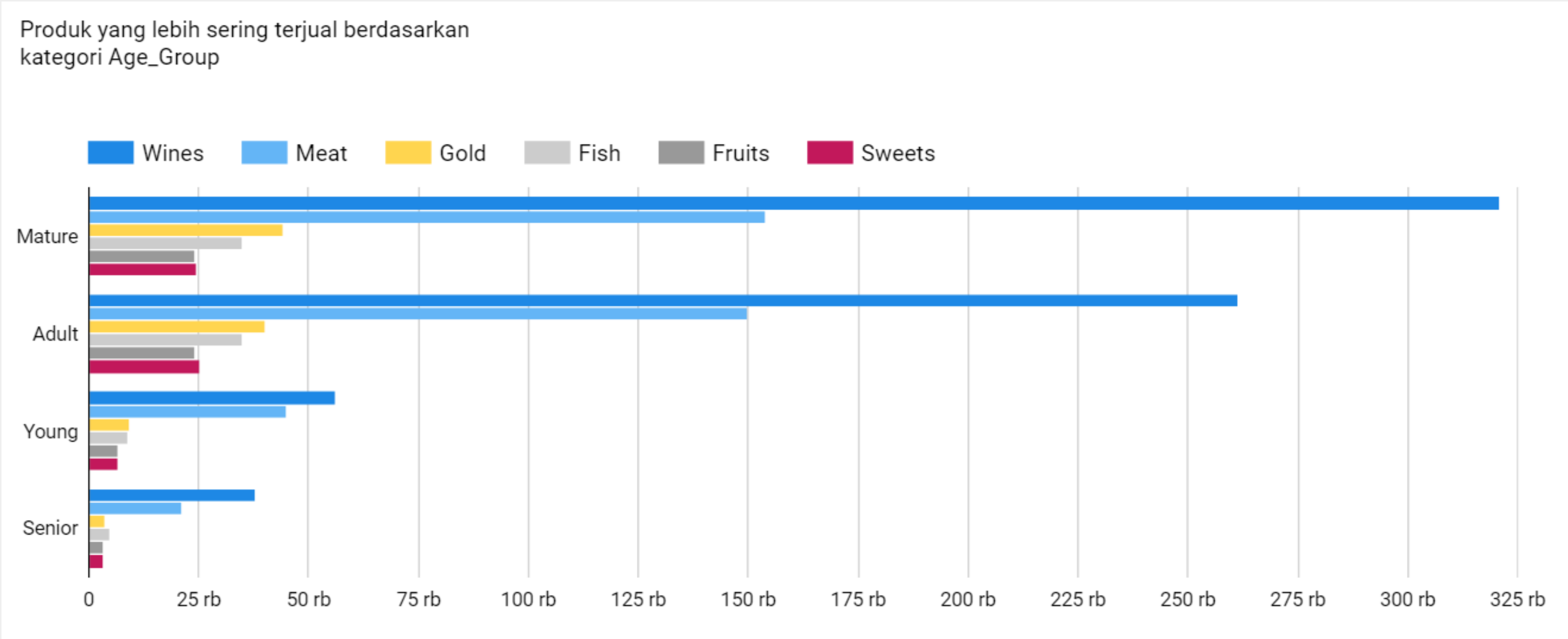
Wines
676.074

Total Spending
1.345.217

LINK DATA STUDIO



Data Visualitation



Analysis Result

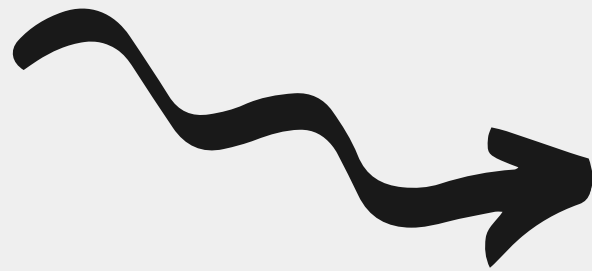
[Biggest Customers]

SUPER CUSTOMERS & RISING CUSTOMERS. Customer dengan kategori ini berkontribusi sekitar 47,47%. dengan Pengeluaran sebesar 18,51% dari total customer secara keseluruhan



[Potential Customers]

HIGH INCOME but low SPENDING. Customer berikut memiliki pendapat besar, tetapi belum begitu tertarik untuk membeli produk perusahaan. Jadi perusahaan perlu meningkatkan promosi khusus terhadap customer di segmen ini.



[Product Choice]

Berdasarkan hasil analysis sebagian besar pelanggan terutama, dalam kategori dewasa (mature), cenderung menghabiskan lebih banyak uang untuk **Produk Wines dan Meat.**



Conclusion

Pola konsumsi pelanggan yang tercatat dapat digunakan sebagai cara untuk merancang strategi pemasaran sesuai dengan target segmentasi pasar. Dari hasil pengolahan data dapat disimpulkan:

- Dari produk unggulan (wines & meat product) untuk memastikan tingkat retensi pelanggan tinggi diantaranya pertama, kita lakukan upaya menjaga kualitas (produk, delivery, showcase), kedua memberikan program promo (discount, bundling).
- Untuk menjaga loyalitas pelanggan pada kriteria Super & Rising Customer diantaranya dapat dilakukan dengan loyalty program dimana didalamnya bisa diberlakukan pemberian point belanja, pemberian voucher, dan notifikasi langsung kepada pelanggan apabila ada program promo yg menarik
- Bagi pelanggan high potential masih diperlukan kajian lebih lanjut terkait pola konsumsi belanja mereka (apakah terpengaruh dengan price, service, product, atau substitution defector dari pesaing)



Thank You
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