

TEAM 9

ANALYTICS METHODOLOGY AND RESULTS

27 JULY, 2022

LEARNING OBJECTIVES

Shelf space allocation

Allocate shelf space to maximize the profits earned with adequate product offering.

Shopping cart analysis

Identify patterns and correlation in product purchasing to generate actionable insight.

Customer Segmentation

Segment customers to understand their spending patterns and which are the most valuable customers.

Price Elasticity

Calculate the elasticity to compare the sensitivity of sales volume to price changes and to recommend optimal pricing for each product

Product ID	Profit Facing	Width Facing
30713	14.55	78.21
101119	70.33	461.96
28643	116.57	1124.78
101120	64.71	696.57
103984	36.94	398.36
113792	7.64	85.33
103983	17.95	203.80
32796	0.64	77.51
	Total Width	3595.94
	Total Profit	370.16

STEP 1

SHELF SPACE ALLOCATION



Maximize profit

these are selected products for display striving to attain maximum profit per month with the shelf width of 3600 mm.

SHELF SPACE ALLOCATION - STEP 2

TOP 3 PROFITABLE PRODUCTS PER BRAND

Brand ID	Product ID	Monthly Demand	Width	Weight	Unit Margin
424	109659	25.00	100		0.86
	109656	25.00	100		0.78
	109657	30.33	100		0.77
423	109672	15.33	105		0.47
	109673	14.67	105		0.47
	109669	21.67	105		0.45
371	113010	8.00	92		0.86
	113012	12.67	92		0.77
	113014	12.67	92		0.76
348	32823	3.33	89.91		2.69
	32818	13.00	93.74		2.48
	32817	11.33	95.84		2.49
128	31266	54.33	76.48		0.62
	31268	18.00	95.08		0.68
	31270	33.67	92.94		0.64
35	30713	1.00	78.21		14.55
	101119	5.67	76.99	384.97	70.33
	28643	14.33	80.34	1044.44	116.57
	101120	6.33	116.10	464.38	43.14
Total Width	3564.33				
Total Profit	260.38				

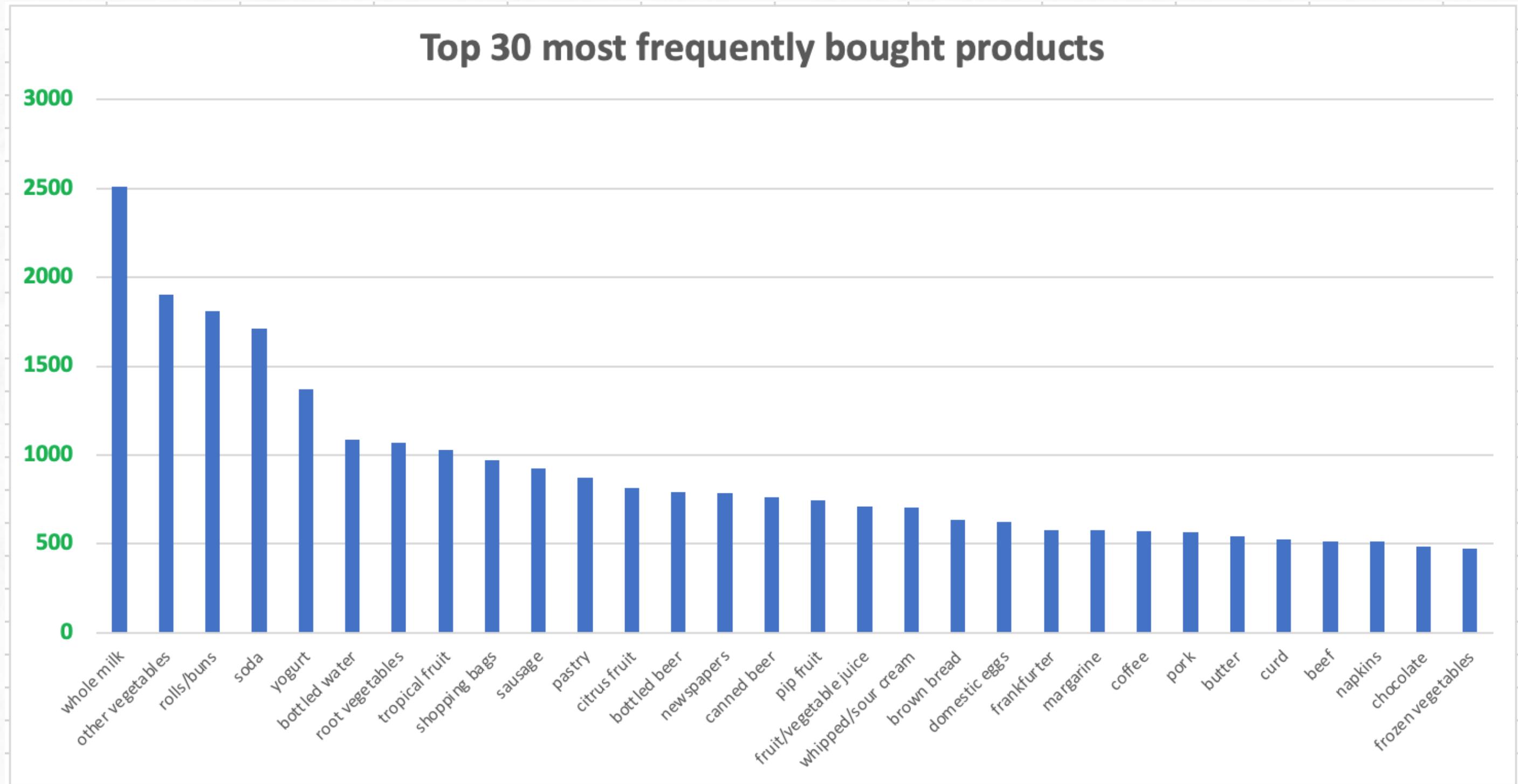
brand_id	product_id	Width per 1 product		Unit Margin
35	30713	78.21		14.55
35	101119	76.99	384.97	70.33
35	28643	80.34	723.07	83.26
48	118717	99.70		0.61
48	118699	78.36		0.39
48	118715	120.74		0.59
48	118704	83.23		0.39
48	118695	75.06		0.34
48	118702	92.94		0.38
48	118701	106.21		0.43
48	118711	103.25		0.40
128	31266	76.48		0.62
128	31268	95.08		0.68
128	31270	92.94		0.64
348	32823	89.91		2.69
348	32818	93.74		2.48
348	32817	95.84		2.49
371	113010	92.00		0.86
371	113012	92.00		0.77
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423	109672	105.00		0.47
423	109673	105.00		0.47
423	109669	105.00		0.45
424	109659	100.00		0.86
424	109656	100.00		0.78
424	109657	100.00		0.77
			Total Width	3538.08
			Total Profit	187.47

BEST ARRANGEMENT AND ESTIMATE MONTHLY PROFIT

SHELF SPACE ALLOCATION - STEP 3

STEP 1

SHOPPING CART ANALYSIS

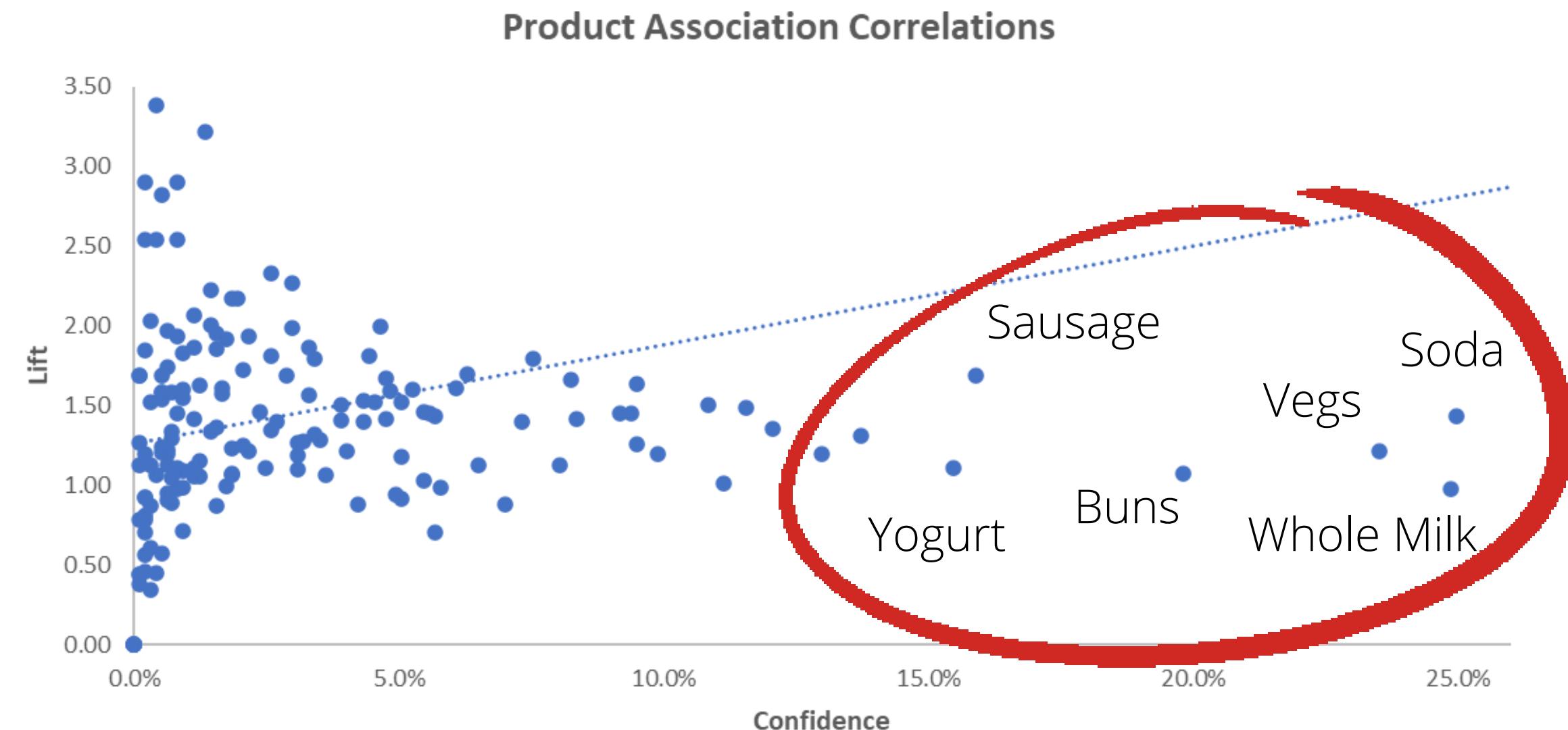


whole milk
2513

The most frequently bought product is whole milk

SHOPPING CART ANALYSIS - STEP 2

5 MOST PROMISING PRODUCTS BASED ON ASSOCIATION RULES



TASK 3

CUSTOMER SEGMENTATION

AVERAGES

CustomerID	recency	frequency	monetary	Average Spending
18102	0	60	259657.3	4327.62
17450	8	46	194390.79	4225.89
14088	10	13	50491.81	3883.99
14096	4	17	65164.79	3833.22
13081	11	11	28337.38	2576.13
15769	7	26	56252.72	2163.57
17107	33	6	10797.48	1799.58
14680	25	16	28754.11	1797.13
13340	45	7	10736.48	1533.78
12939	64	8	11581.8	1447.73
14258	9	9	12669.98	1407.78

TOP 10 MOST VALUABLE CUSTOMERS



8,808.72



25.65



2,636

TASK 4

PRICE ELASTICITY



Product	Average Price (Pavg)	Average Sales (Qav)	Cost	Elasticity	Optimal Product pricing (Popt)	Popt-Pav (ΔP)	Profit (Avg revenue margin - New Revenue margin)
P8	2.24	15631.07	1.50	-0.73	3.39	1.15	18043.14
P5	5.60	12292.71	3.80	-1.01	7.46	1.86	22923.59
P7	4.10	5323.96	2.50	-5.77	3.66	-0.45	(2376.86)

Objective & Methodology

Calculate the linear price elasticity metric to compare the sensitivity of sales volume to price changes among different products.

Calculate and recommend optimal prices for various products based on the average historical weekly sales.

Insights

P8 elasticity < 1 ; Demand is inelastic (price effect outweighs the quantity effect)

P5 elasticity ~ 1 ; Demand is unitary

P7 elasticity > 1 ; Demand is elastic (quantity effect outweighs the price effect)

Recommendations

P8 price can be increased which will result in higher revenue/ expenditure
 P7 price can be decreased which will result in more sales and higher revenue

FINDINGS & OUTCOMES



SHELF SPACE ALLOCATION

- Reduce the time staff spends carrying less profitable products to shelves.
- Reduce lost sales and increase revenue within limited spaces



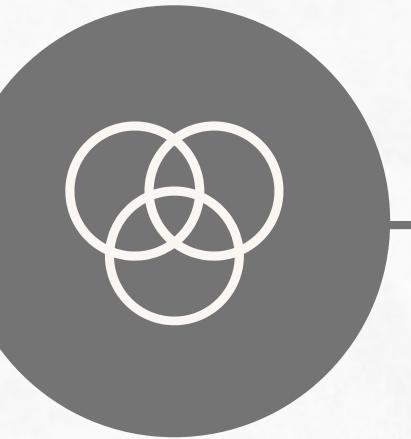
SHOPPING CART ANALYSIS

- Store layout
- Targeted marketing
- Product Recommendation
- Ad Optimization
- Inventory Optimization



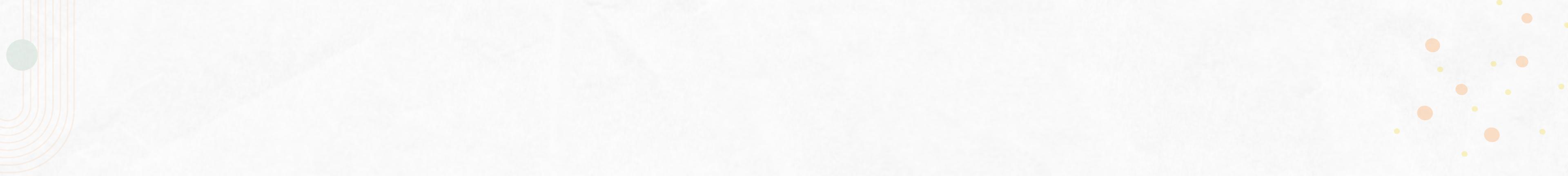
CUSTOMER SEGMENTATION

- Segment valuable customers to plan targeted promotions according to our customer's spending behavior at the store.



PRICE ELASTICITY

- Maximize revenue while keeping loyal customers
- Able to plan effective marketing after knowing an accurate calculation of price elasticity



WE WANT TO SAY
THANK YOU

FOR YOUR ATTENTION

TEAM 9



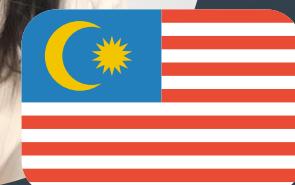
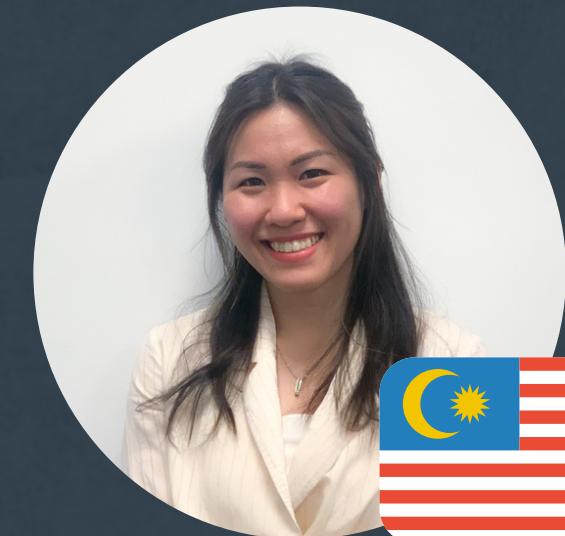
RATIROS
KANGSADANMANEECHAI



MATTHEW
MILAKOVIC



THEJASWINI
PARIPALLY



MEI HWA WONG



JULIO JOSE PEREA BECH