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Coffee Shop Analysis and Strategic Recommendations

Inventory management and product pricing:

1) Identify products that should be discontinued and products that should be purchased more.

Explanation:

We want to compare the products' profitability (unit * unit price – unit cost) with the retail price of the product to see whether we should keep this product or not. When profitability is higher than the product's retail price, we can determine to keep the product for higher margins in the long run. When profitability is lower than the product's retail price, we can determine to not keep the inventory.

Products to be purchased more:

product_id	product_categ...	product	profitabil...	retail_pri...
8	Coffee beans	Civet Cat	72	45.00
82	Branded	I Need My Bean! Diner mug	48.96	12.00
83	Branded	I Need My Bean! Latte cup	38.08	14.00
82	Branded	I Need My Bean! Diner mug	19.16	12.00
83	Branded	I Need My Bean! Latte cup	19.04	14.00
83	Branded	I Need My Bean! Latte cup	18.52	14.00
82	Branded	I Need My Bean! Diner mug	16.32	12.00
41	Coffee	Cappuccino Lg	13.6	4.25
39	Coffee	Latte Rg	10.2	4.25
41	Coffee	Cappuccino Lg	10.2	4.25

Products to be discontinued:

product_id	product_category	product	profitability	retail_pri...
9	Coffee beans	Organic Decaf Blend	-6	22.50
72	Bakery	Ginger Scone	0.54	3.25
65	Flavours	Sugar Free Vanilla syrup	0.76	0.80
64	Flavours	Hazelnut syrup	0.76	0.80
84	Flavours	Chocolate syrup	0.76	0.80
63	Flavours	Carmel syrup	0.76	0.80
58	Drinking Chocolate	Dark chocolate Rg	0.8700000000000001	3.50
60	Drinking Chocolate	Sustainably Grown Organic Rg	0.94	3.75
69	Bakery	Hazelnut Biscotti	0.9700000000000002	3.50
77	Bakery	Oatmeal Scone	1.05	3.00

2) Identify pastry products that have high waste. To move these products faster, identify promotional pricing to minimize losses.

Explanation:

We want to find the waste percentage for each product, then identify the top 5 items to discount so that we can move inventory while maximizing revenue. To find promotional pricing, we must price it so that the difference between the retail price and wholesale price is greater than zero.

product_id	product	waste	retail_price	% waste	current_wholesale_price	new_price
69	Hazelnut Biscotti	17	3.50	94%	2.28	2.7359999999999998
71	Chocolate Croissant	16	3.75	89%	2.44	2.928
70	Cranberry Scone	14	3.25	78%	2.11	2.5319999999999996
73	Almond Croissant	14	3.75	78%	2.44	2.928
72	Ginger Scone	29	3.25	60%	2.11	2.5319999999999996

3) Identify top 5 products, for each store, that are most frequently purchased in higher quantities (>1).

Explanation:

We grouped products per Store Id and summed the total quantity purchased, after filtering for products that are generally purchased in quantities greater than one.

product	outlet_id	total_quantity
Earl Grey Rg	3	386
Dark chocolate Lg	3	382
Peppermint Rg	3	372
Jamaican Coffee River Rg	3	366
Latte	3	356
Ethiopia Sm	5	392
Morning Sunrise Chai Rg	5	378
Sugar Free Vanilla syrup	5	377
Ethiopia Rg	5	368
Earl Grey Rg	5	359
Ethiopia Lg	8	372
Brazilian Sm	8	358
Serenity Green Tea Rg	8	350
Latte Rg	8	346
Traditional Blend Chai Rg	8	346

4) Identify top 1 product in each category that is most frequently purchased in higher quantities.

Explanation: We want to group by the product category based on the amount of the most purchased product. We should filter out the maximum quantity of a product and its total quantity sold, then order by descending to find the product with highest volume sold.

product	product_category	sum_quantity
Dark chocolate Lg	Drinking Chocolate	1068
Earl Grey Rg	Tea	1059
Ethiopia Sm	Coffee	1056
Sugar Free Vanilla syrup	Flavours	701
Ginger Scone	Bakery	148
Civet Cat	Coffee beans	32
I Need My Bean! Diner mug	Branded	8

5) Briefly discuss your overall product and inventory management strategy based on insights from above (maximum 150 words)

Overall, coffee and drinking chocolate is the most profitable product category due to having a higher retail price than the wholesale price. On the other hand, certain pastry products appear to be both unprofitable and have high waste, such as Hazelnut Biscotti. Branded items also had high profitability, which may demonstrate that our competitive advantage is in coffee, tea, drinking chocolate, and branded products, and thus we should focus on developing new products in those areas, as opposed to flavored syrups or pastries. Among Stores 3, 5, and 8, of the top 5 products that are most frequently purchased from each, Store 5 has the greatest total. Thus, we recommend running promotional pricing or having a "Buy X get XX% off" to anchor a greater quantity purchased. We can focus on managing these highly demanded products in order to maximize the profit.

Customer segmentation:

1) Identify top 10 most loyal customers by total sales and top 10 by total sales/week

Explanation:

We want to identify loyal customers from different tables such as customer, sales_reciepts, and customer_id. We can group an identifier, customer_id, to track the matching subsets from each tables according to how much the products got sold, which defines the "loyalty" of the customer. We can calculate total amount of sales from multiplying unit price and quantity.

customer_id	customer_first-name	sales
8311	Hanna	459.75
3	Elvis Cardenas	188.9
5026	Kibo	168.75
8144	Leslie	165.65
8285	Francesca	164.05
8048	Buckminster	159.95
8341	Ferdinand	155.29999999999998
8138	Barclay	142.6
8410	Buffy	141.85
5033	Nola	141.45

Week 13:

customer_id	customer_first-name	sales_week	sales_per_week
8384	Leandra	13	76.15
8397	Inga	13	73.6
8041	Amethyst	13	69.15
8290	Xanthus	13	68
8279	Willa	13	66.85
8414	Danielle	13	65.35
8297	Cherokee	13	62.75
8458	Stacy	13	62.650000000000006
8019	Kiayada	13	61.9
8226	Kieran	13	61.5

Week 14:

customer_id	customer_first-name	sales_week	sales_per_week
5026	Kibo	14	99.55
8144	Leslie	14	79.1
8138	Barclay	14	78.7
5598	MacKenzie	14	77.75
8310	Eagan	14	75.45
8227	Trevor	14	72.25
8341	Ferdinand	14	71.05
653	Wanda Vinson	14	68.5
130	Dale Marquez	14	66.75
5688	Nathan	14	65.95

Week 15:

customer_id	customer_first-name	sales_week	sales_per_week
8311	Hanna	15	369.85
3	Elvis Cardenas	15	75.55
8048	Buckminster	15	74.15
8003	Vera	15	67.6
526	Jessica May	15	65
342	Blossom Alford	15	57.2
28	Harding Jarvis	15	53.55
634	Dawn Herring	15	51.5
643	Mona Hess	15	49.5
34	Murphy Mckee	15	48.03

Week 16:

customer_id	customer_first-name	sales_week	sales_per_week
8365	Flynn	16	73
8267	Jin	16	61.95
5354	Amber	16	59.25
3	Elvis Cardenas	16	56.3
8006	Zena	16	54.5
5091	Meghan	16	52.75
8289	Gavin	16	51
5327	Alisa	16	50.7
342	Blossom Alford	16	49
8118	Ralph	16	47.75

Week 17:

customer_id	customer_first-name	sales_week	sales_per_week
5678	Barry	17	28
5671	Velma	17	28
5378	Hilary	17	26.7
5071	Beau	17	25
5023	Andrew	17	24.65
5787	Dai	17	24.45
5906	Jermaine	17	23
5097	Yuli	17	22.95
5900	Maggie	17	22.5
8196	Fay	17	22.4

2) Identify top 5 customers by total sales in each age bracket (pick five age brackets)

Explanations:

We chose five age brackets each with a duration of ten years. We found the earliest birth year, which was 1950, and then the latest birth year, which was 2001, and then grouped them into five groups with a ten year duration, with the exception of eleven years for the latest age bracket.

	customer_first-name	birth_year	sales
▶	Meghan	1950	336.5799999999999
	Mark	1959	234.50999999999996
	Malcolm	1953	218.47999999999996
	Garrett	1957	199.45000000000002
	Elvis Cardenas	1950	188.9

	customer_first-name	birth_year	sales
▶	Hanna	1967	459.75
	Amethyst	1962	275.05
	Lana	1969	262.4
	Gareth	1962	260.43
	Willow	1961	243

	customer_first-name	birth_year	sales
▶	Peter	1971	308.49999999999994
	Ferdinand	1973	258.9
	Todd	1978	241.95000000000005
	Nola	1975	220.25
	Sandra	1975	218.9

	customer_first-name	birth_year	sales
▶	Alfreda	1981	293.8
	Leslie	1980	243.25000000000003
	Dolan	1985	233.6
	Hashim	1983	230.70000000000002
	Rhonda	1980	228.13

	customer_first-name	birth_year	sales
▶	Summer	1994	355.55
	Barry	1997	293.59999999999997
	Hall	2000	251.54999999999998
	Tanya	1992	247.3
	Barclay	1996	224.39999999999998

3) Identify top 5 customers by total sales in each gender

Explanation:

We calculated total sales per customer and grouped by customer_id (to track the customer) and gender, and then limited the results to five to find the top five customers.

Female:

	first_name	customer_id	gender	sales
▶	Hanna	8311	F	459.75
	Leslie	8144	F	165.65
	Buffy	8410	F	141.85
	Nola	5033	F	141.45
	Cherokee	8297	F	136.15

Male:

	first_name	customer_id	gender	sales
▶	Elvis Cardenas	3	M	188.9
	Kibo	5026	M	168.75
	Ferdinand	8341	M	155.29999999999998
	Flynn	8365	M	130.35
	Ralph	8118	M	128.95

Non-binary:

first_name	customer_id	gender	sales
Francesca	8285	N	164.05
Buckminster	8048	N	159.95
Barclay	8138	N	142.6
Meghan	5091	N	131.4
Tad	8375	N	125.6

4) Briefly discuss your overall customer targeting strategy based on insights from above.

To target customers, we should focus on female customers; the top five female customers spend more on average than male/no gender labelled. Customers born in the 1960s spend more than other customers on average; however, this difference is less than that when averaging by gender. We can target these customers through utilizing promotional pricing or discounts if we look further into which types of products they most commonly purchase. Additionally, we can analyze if these customer segments purchased the products in store or not to determine which distribution and marketing channels would be most effective to reach them. The store could offer loyalty or membership awards for customers who purchase over a certain amount per time period (one week or month). For example, Hanna spends over $360 in week 15, demonstrating that we could reach out to our most loyal customers with a loyalty/membership program to provide them with greater discounts.

Store management:

1) Identify revenue by location and by product type

Explanation:

Group by store address to identify location and its following product type. Thus, we need to calculate the actual total revenue by multiplying order and unit_price under the sales_receipt table in order to get the actual revenue of the products.

store_address	product_type	revenue
687 9th Avenue	Premium Beans	12153.5
100 Church Street	Housewares	9540
32-20 Broadway	Clothing	9262
100 Church Street	Clothing	8568
100 Church Street	Premium Beans	7540.75
687 9th Avenue	Barista Espresso	7325.30000000005
687 9th Avenue	Organic Beans	7294.5
32-20 Broadway	Premium Beans	6904.25
100 Church Street	Organic Beans	6871.5
32-20 Broadway	Housewares	6826
32-20 Broadway	Barista Espresso	6747.5
100 Church Street	Barista Espresso	6549.050000000032
32-20 Broadway	Brewed Chai tea	6173.400000000068

2) Identify employee of the week for each week

Explanation:

In order to identify employee of the week per week, we identified which employee associated with a staff_id yielded the highest sales for that week. We were interested in seeing if position or start_date affected which employee achieved the highest sales per week.

Week 13: staff_id = 12

sales_week	staff_id	position	start_date	sales
13	12	Coffee Wrangler	3/25/2006	12153.75000000003
13	17	Coffee Wrangler	12/5/2014	7559.3999999999905
13	45	Coffee Wrangler	3/21/2019	5030.749999999997
13	42	Coffee Wrangler	1/30/2011	4843.699999999996
13	26	Store Manager	11/11/2013	4530.349999999996
13	15	Coffee Wrangler	5/9/2014	4508.299999999994
13	30	Coffee Wrangler	9/17/2005	4402.549999999997

Week 14: staff_id = 42

sales_week	staff_id	position	start_date	sales
14	42	Coffee Wrangler	1/30/2011	4312.6799999999985
14	41	Store Manager	10/13/2001	4041.1599999999953
14	43	Coffee Wrangler	1/31/2015	3918.129999999995
14	44	Coffee Wrangler	5/17/2005	3830.9799999999977
14	29	Coffee Wrangler	7/26/2016	3479.9600000000005
14	30	Coffee Wrangler	9/17/2005	3172.7699999999973
14	27	Coffee Wrangler	7/31/2003	3168.329999999998

Week 15: staff_id = 12

sales_week	staff_id	position	start_date	sales
15	12	Coffee Wrangler	3/25/2006	7436.160000000011
15	42	Coffee Wrangler	1/30/2011	5188.6600000000035
15	16	Store Manager	3/30/2006	4422.259999999997
15	17	Coffee Wrangler	12/5/2014	4304.489999999999
15	44	Coffee Wrangler	5/17/2005	4290.679999999997
15	20	Coffee Wrangler	2/13/2002	3872.7599999999998
15	6	Store Manager	7/24/2016	3793.779999999995

Week 16: staff_id = 20

sales_week	staff_id	position	start_date	sales
16	20	Coffee Wrangler	2/13/2002	6172.199999999996
16	16	Store Manager	3/30/2006	5864.179999999992
16	14	Coffee Wrangler	6/5/2010	5527.499999999992
16	26	Store Manager	11/11/2013	4692.8899999999985
16	12	Coffee Wrangler	3/25/2006	4585.279999999998
16	45	Coffee Wrangler	3/21/2019	3869.2799999999957
16	27	Coffee Wrangler	7/31/2003	3757.1

Week 17: staff_id = 20

sales_week	staff_id	position	start_date	sales
17	20	Coffee Wrangler	2/13/2002	1748.1000000000006
17	16	Store Manager	3/30/2006	1706.1000000000006
17	14	Coffee Wrangler	6/5/2010	1704.6500000000008
17	12	Coffee Wrangler	3/25/2006	1421.7500000000005
17	26	Store Manager	11/11/2013	1388.1000000000004
17	42	Coffee Wrangler	1/30/2011	1344.6500000000003
17	30	Coffee Wrangler	9/17/2005	1337.1000000000006

3) Briefly discuss your overall store management plan based on insights from above (maximum 150 words)

Overall store management should focus revenue generating efforts (such as promotional pricing) on bakeries located on various streets, because the top five stores by revenue are all bakeries. In terms of employee management, it appears that Coffee Wranglers are the positions who bring in the most revenue, in addition to Store Managers. These positions can justify pay rises as well as more hours or people in each position. Earlier start dates appear positively correlated with achieving employee of the week as measured by sales, meaning that they become more efficient salespeople, and we can invest in better training at the beginning of workers' tenure. Also, the same people are attaining employee of the week when measuring their performance by sales; however, we could investigate other metrics, such as customers gained, to nominate employee of the week, if this is a more desirable performance indicator.