

Retail Data Mining Report

CS 6320 Laurence Burden

This report will show five data associations found within the Retail Store Dataset. Each association will contain the following headings:

Description: A description of the association between dimensions and facts.

Data Uses: Various use cases for the association. Such as targeted mailing, price reduction sales, inventory management, etc.

Result: The result of the association.

Top Selling Item by Month

Description: This association finds the top-selling item in each month over three and a half years (2022 - 2025).

Data Uses: This data can be used to plan for a surge in inventory on the upcoming month's top-selling item. A price reduction sale of the previous month's top-selling item could also be planned. This will allow for reducing any extra inventory.

Result:

Month	Top-Selling Item
January	item_6_cea
February	item_1_fur
March	item_11_pat
April	item_12_but
May	item_12_bev
June	item_3_milk
July	item_2_ehe
August	item_12_fu
September	item_15_fur

Month	Top-Selling Item
October	item_2_cea
November	item_17_bev
December	item_9_bev

Top Pairings

Description: The items that are most often bought together as a pair.

Data Uses: The store could run a sale where a third, less popular item, is discounted when purchased along with a popular item pairing.

Results:

item_11_pat	item_19_milk
item_19_pat	item_22_but
item_22_cea	item_2_bev

Sales by FY and Month

Description: A breakdown of each fiscal year by month, including total sales revenue for that month.

Data Uses: This data can be used to see historical trends. Such as months that typically bring in more revenue than others, and comparative analysis between months across FY.

Result:

FY	Month	Total Revenue
22	January	\$52,911.50
	February	\$43,325.50
	March	\$40,996.00
	April	\$40,442.00
	May	\$40,347.50

FY	Month	Total Revenue
	June	\$42,576.00
	July	\$44,471.50
	August	\$41,333.50
	September	\$46,113.50
	October	\$38,355.00
23	January	\$48,052.50
	February	\$39,214.50
	March	\$38,534.50
	April	\$38,905.50
	May	\$40,480.50
	June	\$42,474.00
	July	\$45,632.50
	August	\$38,592.00
	September	\$41,069.00
	October	\$38,322.00
	November	\$41,256.50
	December	\$38,201.00
24	January	\$47,908.50
	February	\$37,145.00
	March	\$42,861.50
	April	\$46,271.00
	May	\$43,766.50
	June	\$44,721.00
	July	\$41,405.00
	August	\$43,362.00
	September	\$42,161.50
	October	\$42,736.50

FY	Month	Total Revenue
	November	\$37,014.00
	December	\$43,021.00
25	January	\$25,548.50
	February	\$44,076.00
	March	\$48,466.50

Products by Location and Quarter

Description: A breakdown of the number of items sold in each quarter, and separated by online and in-store sales.

Data Uses: A stronger advertising push can be made for items at locations that sell more of those items in that quarter.

Result:

Location	Quarter	Items Sold
In-Store	1	1,452
	2	1,298
	3	1,292
	4	1,265
	Total In-Store Items Sold	5,307
Online	1	1,416
	2	1,339
	3	1,403
	4	1,296
	Total Online Items Sold	5,454

Top 10 Customers by Revenue

Description: A list of the top 10 customers by the amount of money they have spent over the lifetime of their account. The number of transactions each of these customers has completed is also given.

Data Uses: This data can be used to target high-spending individuals with ads that will entice them to purchase other items. Targeted discounts could also be given to maintain the loyalty of these customers.

Results

Customer ID	Total Spent	Number of Transaction
cust_24	\$68,452.00	466
cust_08	\$67,351.50	459
cust_05	\$66,974.50	458
cust_16	\$65,570.50	444
cust_13	\$65,037.00	452
cust_23	\$64,507.00	437
cust_10	\$63,155.50	441
cust_15	\$63,117.50	458
cust_21	\$62,933.00	419
cust_02	\$62,046.50	422