**Customer Behaviour Analysis for Superstore's Sales Optimization**

**1. Introduction**

Superstore, an office supplies company, aims to enhance customer retention, identify high-value customers, and optimize its marketing strategies. This report explores customer behaviour using Superstore’s sales dataset through SQL-based data analysis.

**2. Project Goals**

We focused on:

* Customer segmentation by region.
* Customer retention and repeat purchases.
* Identifying high-value customers.
* Analyzing purchase frequency.
* Exploring monthly purchase trends.

**3. Dataset Overview**

The Superstore dataset contains:

* **Orders:** Details about orders, dates, customers, segments, and products.
* **Customers:** Customer-specific data like names and regions.
* **Products:** Product categories and sub-categories.
* **Sales:** Sales metrics such as quantity, sales amount, discounts, and profit.

**4. Analysis and Insights**

**4.1. Customer Segmentation by Region**

**Objective: a.** Identify the top 10 regions by unique customers and customer distribution.

**b.** Distribution of Customers Across Regions.

**Key Findings:**

* Top regions: West, East, Central and South
* Insights: Regions with high customer counts have significant sales potential, indicating strong market presence.

SQL Query:

**a. Identify the top 10 regions by unique customers and customer distribution.**

SELECT TOP 10

[Region],

COUNT(DISTINCT [Customer ID]) AS UniqueCustomers

FROM Orders$

GROUP BY [Region]

ORDER BY UniqueCustomers DESC;LIMIT 10;

**b. Distribution of Customers Across Regions.**

SELECT

Region,

COUNT(DISTINCT [Customer ID]) AS UniqueCustomers,

COUNT([Order ID]) AS TotalOrders,

SUM(Sales) AS TotalSales

FROM Orders$

GROUP BY Region

ORDER BY UniqueCustomers DESC;

**4.2. Customer Retention and Repeat Purchases**

**Objective: a.** Number of Customers with More than One Order.

**b.** Top 5 Customers by Order Count

**Key Findings:**

* **Customers with multiple orders:** 65% of customers placed more than one order.
* **Top 5 Repeat Customers:** Customer name with order counts; William Brown, John Lee, Matt Abelman, Paul Prost and Chloris Kastensmidt.

**SQL Query:**

**a.** **Number of Customers with More than One Order.**

SELECT

COUNT(\*) AS RepeatCustomers

FROM (

SELECT

[Customer ID]

FROM Orders$

GROUP BY [Customer ID]

HAVING COUNT([Order ID]) > 1

) AS RepeatCustomerList;

**b. Top 5 Customers by Order Count**

SELECT TOP 5

[Customer ID],

[Customer Name],

COUNT([Order ID]) AS TotalOrders,

SUM(Sales) AS TotalSales

FROM Orders$

GROUP BY [Customer ID], [Customer Name]

ORDER BY TotalOrders DESC;

**4.3. High-Value Customers**

**Objective: a.** Identify the top 10 customers by total spending and their purchasing patterns.

**b.** Purchasing Patterns of High-Value Customers

**Key Findings:**

* **Top 10 Customers by Sales:** SM-20320, TC-20980, RB-19360, TA-21385, AB-10105, KL-16645, SC-20095, HL-15040, SE-20110, CC-12370.
* **Popular Categories:** Office Supplies, Technology.
* **Average Order Value:** $1,200

**SQL Query:**

**a.** **Identify the top 10 customers by total spending and their purchasing patterns.**

SELECT TOP 10

[Customer ID],

[Customer Name],

SUM(Sales) AS TotalSales,

COUNT([Order ID]) AS TotalOrders,

AVG(Sales) AS AverageOrderValue

FROM Orders$

GROUP BY [Customer ID], [Customer Name]

ORDER BY TotalSales DESC;

**b. Purchasing Patterns of High-Value Customers**

SELECT

[Customer ID],

Category,

SUM(Sales) AS CategorySales,

COUNT([Order ID]) AS TotalOrders

FROM Orders$

WHERE [Customer ID] IN (

SELECT TOP 10 [Customer ID]

FROM Orders$

GROUP BY [Customer ID]

ORDER BY SUM(Sales) DESC

)

GROUP BY [Customer ID], Category

ORDER BY [Customer ID], CategorySales DESC;

**4.4. Customer Purchase Frequency**

**Objective: a.** Average Number of Purchases per Customer

**b.** Trends or Patterns by Customer Segments

**Key Findings:**

* **Average Purchases:** 12 per customer
* **Top Segment:** Consumer customers with frequent orders.

**SQL Query:**

**a.** **Average Number of Purchases per Customer**

SELECT

AVG(OrderCount) AS AvgOrdersPerCustomer

FROM (

SELECT

[Customer ID],

COUNT([Order ID]) AS OrderCount

FROM Orders$

GROUP BY [Customer ID]

) AS CustomerOrders;

**b. Trends or Patterns by Customer Segments**

WITH CustomerOrdersBySegment AS (

SELECT

Segment,

[Customer ID],

COUNT([Order ID]) AS OrderCount,

SUM(Sales) AS Sales

FROM Orders$

GROUP BY Segment, [Customer ID]

)

SELECT

Segment,

AVG(OrderCount) AS AvgOrdersPerCustomer,

SUM(Sales) AS TotalSales

FROM CustomerOrdersBySegment

GROUP BY Segment

ORDER BY AvgOrdersPerCustomer DESC;

**4.5. Monthly Purchase Trends**

**Objective:** **a**. Monthly Sales Analysis.

**b**. Months with Highest and Lowest Orders

**c**. Months with Highest and Lowest Total Sales

**Key Findings:**

* **Highest Sales Months:** December (holiday season).
* **Lowest Sales Months:** February.
* **Months with Highest Orders:** December
* **Months with Lowest Orders:** February.
* **Month with Lowest Total Sales:** February.

**SQL Query:**

**a. Monthly Sales Analysis.**

SELECT

FORMAT([Order Date], 'yyyy-MM') AS OrderMonth,

COUNT([Order ID]) AS TotalOrders,

SUM(Sales) AS TotalSales

FROM Orders$

GROUP BY FORMAT([Order Date], 'yyyy-MM')

ORDER BY OrderMonth;

**b. Months with Highest Orders**

SELECT TOP 1

FORMAT([Order Date], 'yyyy-MM') AS OrderMonth,

COUNT([Order ID]) AS TotalOrders

FROM Orders$

GROUP BY FORMAT([Order Date], 'yyyy-MM')

ORDER BY TotalOrders DESC;

**b. Months with Lowest Orders**

SELECT TOP 1

FORMAT([Order Date], 'yyyy-MM') AS OrderMonth,

COUNT([Order ID]) AS TotalOrders

FROM Orders$

GROUP BY FORMAT([Order Date], 'yyyy-MM')

ORDER BY TotalOrders ASC;

**d. Month with Highest Total Sales**

SELECT TOP 1

FORMAT([Order Date], 'yyyy-MM') AS OrderMonth,

SUM(Sales) AS TotalSales

FROM Orders$

GROUP BY FORMAT([Order Date], 'yyyy-MM')

ORDER BY TotalSales DESC;

**d. Month with Lowest Total Sales**

SELECT TOP 1

FORMAT([Order Date], 'yyyy-MM') AS OrderMonth,

SUM(Sales) AS TotalSales

FROM Orders$

GROUP BY FORMAT([Order Date], 'yyyy-MM')

ORDER BY TotalSales ASC;

**5. Business Recommendations**

Based on our analysis, we recommend:

1. **Expand in High-Performing Regions:** Increase marketing efforts in top regions.
2. **Loyalty Programs:** Launch loyalty programs targeting repeat and high-value customers.
3. **Segment-Specific Offers:** Create tailored campaigns for corporate and consumer segments.
4. **Seasonal Promotions:** Run promotional campaigns during peak months to boost sales.

**6. Conclusion**

This analysis provided valuable insights into Superstore’s customer behaviour. SQL was used for in-depth data analysis, while Power BI enabled intuitive data visualization, making trends and patterns easier to understand. Leveraging these findings can help the company improve customer engagement, enhance sales performance, and maximize profits.