PROJECT 2: SALES and SEGMENTATION ANALYSIS USING SQL & TABLEAU

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The skills I used in this project:

- Importing a file into SQL Server Database
- SQL Aggregate Functions
- SQL Window Functions
- SQL Sub Queries
- SQL Common Table Expressions (CTEs)
- RFM Analysis
- Data Analysis Using Tableau
- Building Worksheets and Dashboards Using Tableau

About the Dataset:

The data I used in this project is from a Kaggle dataset. The dataset is a sample sales data with order info, sales, customers and shipping. I used the data for customer segmentation analysis using SQL and more general sales and customer analysis using Tableau.

For raw data please visit the following link:

https://www.kaggle.com/datasets/kyanyoga/sample-sales-data

Discovery and General Analytics Using SQL:

For SQL query please visit the following link:

I started my sql query with some general discovery analytics to understand the dataset better. I started with checking distinct/unique values for each column that I believed to yield interesting plots for further analysis.

From there I wanted to see the period of time that is included in the dataset and saw that the dataset started at January 2003 and ended May 2005. Therefore, I decided to exclude 2005 from all further analysis since just 5 months are included in the dataset.

From there I passed onto more general analytics like checking revenues for different years and product lines, or seeing which product line did the company sold most in different years.

RFM Analysis Using SQL:

For the SQL Query please visit the following link:

https://github.com/barsuslu/PortfolioProjects/blob/main/Project_2_Sales_and_Segmentation_Analysis/sales_analysis_query.sql

After discovery and general analytics, I started with RFM (Recency-Frequency-Monetary) analysis to segment the customers according to their past purchase behaviour. An RFM report is a way of segmenting customers using three key metrics:

Receny (how long ago their last purchase was),

Frequency (how often they purchase),

Moneraty Value (how much they spent)

As a result of this analysis, I created 6 different customer segments and labelled each customer with one of these segments.

Results from RFM Analysis

When I counted the number of customers in each segment using SQL the result is as below:

	rfm_segment	no_of_customers
1	Lost Customer	24
2	Active Customers	22
3	Customer Slipping Away	17
4	Loyal Customers	12
5	Potential Churn Customers	11
6	New Customers	6

The result shows that the company is losing customers at a much higher rate than it generates new ones. Also the number of customers that are ‘slipping away’ is pretty high, so in order to increase their revenues the company needs to find ways to stop these customers from slipping away and also needs to convert their ‘Active Customers’ to ‘Loyal Customers’.

Dashboard #1: General Revenue Dashboard

For the dashboard #1 please visit the following link:

https://public.tableau.com/app/profile/baris2293/viz/GeneralRevenueDashboard/GeneralRevenueDashboard?publish=yes

General revenue dashboard sums up all the sales and revenue information of the company. The users can see the annual revenue change, revenue per month for each year, revenue from each customer in each country and revenue by each product line. Users can also filter each country and customer from dropdown filters to see the specific details about them.

The dashboard shows that the company's revenue was increased from 2003 to 2004 for each product line, although the RFM analysis suggests this might not be the case. The reason for that situation might be that company's loyal and active customers are the ones making the substantial revenue and lost customers are actually the ones that only small transactions. My suggestion to the company at this point would be to check the sustainability of this situation in the long run.

Dashboard #2: Distribution Dashboard

For the dashboard #2 please visit the following link:

https://public.tableau.com/app/profile/baris2293/viz/DistributionDashboard_16757694395070/DistributionDashboard?publish=yes

Distribution dashboard shows the information about the distribution of the sales, quantity, price and deal size.

From this dashboard a user can see if the company is actually on track with its sales goals in terms of prices and quantity of each order.

Dashboard #3: Revenue Distribution Dashboard

For the dashboard #3 please visit the following link:

https://public.tableau.com/app/profile/baris2293/viz/RevenueDistributionDashboard_16757698613750/RevenueDistributionDashboard?publish=yes

This dashboard shows the revenue distribution according to each country, product line and status of the orders.

Dashboard shows that the biggest market for the company is by far the USA and the company is selling mainly cars rather than other product lines. Also, the company shipped nearly all its orders.