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**CASE STUDY**

Analysis Topic: Exploring Sales Performance and Trends in a Local Retail Store

Objective: To analyze sales data from a local retail store to gain insights into performance, trends, and factors affecting sales.

**Three types of analysis were conducted in this case study:**

Sales Trend Analysis: To identify monthly sales trends and seasonality patterns.

* Aggregate sales data by month.
* Analyze variations and identify peak and off-peak sales months and hours.
* Explore any seasonal patterns or trends.

Product Performance Analysis: To evaluate the performance of different products in terms of sales volume and revenue.

* Group sales data by product.
* Calculate total quantity ordered, total sales value, and average price for each product.
* Identify top-selling products based on sales volume and revenue.
* Analyze sales distribution across different products.

Geospatial Sales Analysis: To analyze sales patterns and distribution across different geographical locations.

* Plot sales data on a map using geospatial visualization techniques.
* Analyze sales concentration and distribution across different cities.
* Identify cities with high and low sales volumes.

**Key Insights**

* XYZ retail has 19 different types of products on inventory. They sell across 9 different cities in the US.
* USB-C Charging cable is the most popular product with 21,121 orders across different cities and LG dryer and washing machine is the least purchased with 617 and 641 orders respectively.
* MacBook Pro laptop is the most expensive product in inventory with an average unit price of $1,701 while AA/AAA batteries is the least expensive product with an average unit price of $5.
* Although AA/AAA batteries is among the top 5 popular products based on total sales volume with almost 40,000 combined units sold, their contribution to total revenue is the lowest with less than $300k revenue combined (this is because the products are the least expensive with a $5 unit price).
* In 2019, December made the most sales with $4.6M in revenue with January making the least sales with about $700k in revenue.
* Peak sale hours are as follows: between 11am – 1pm, then 6pm – 8pm, after which sales begin to gradually decline into the night up until 4am. Sales gradually increase from 5am up until 10am.
* San Francisco is the most popular city with 23.97% of total sales while Austin recorded the lowest sales with 5.31% of total sales.
* The analysis of product performance by city shows there is an even distribution of products amongst cities. Also, analysis of sales by weekdays show an even distribution of sales amongst 7 days of the week.