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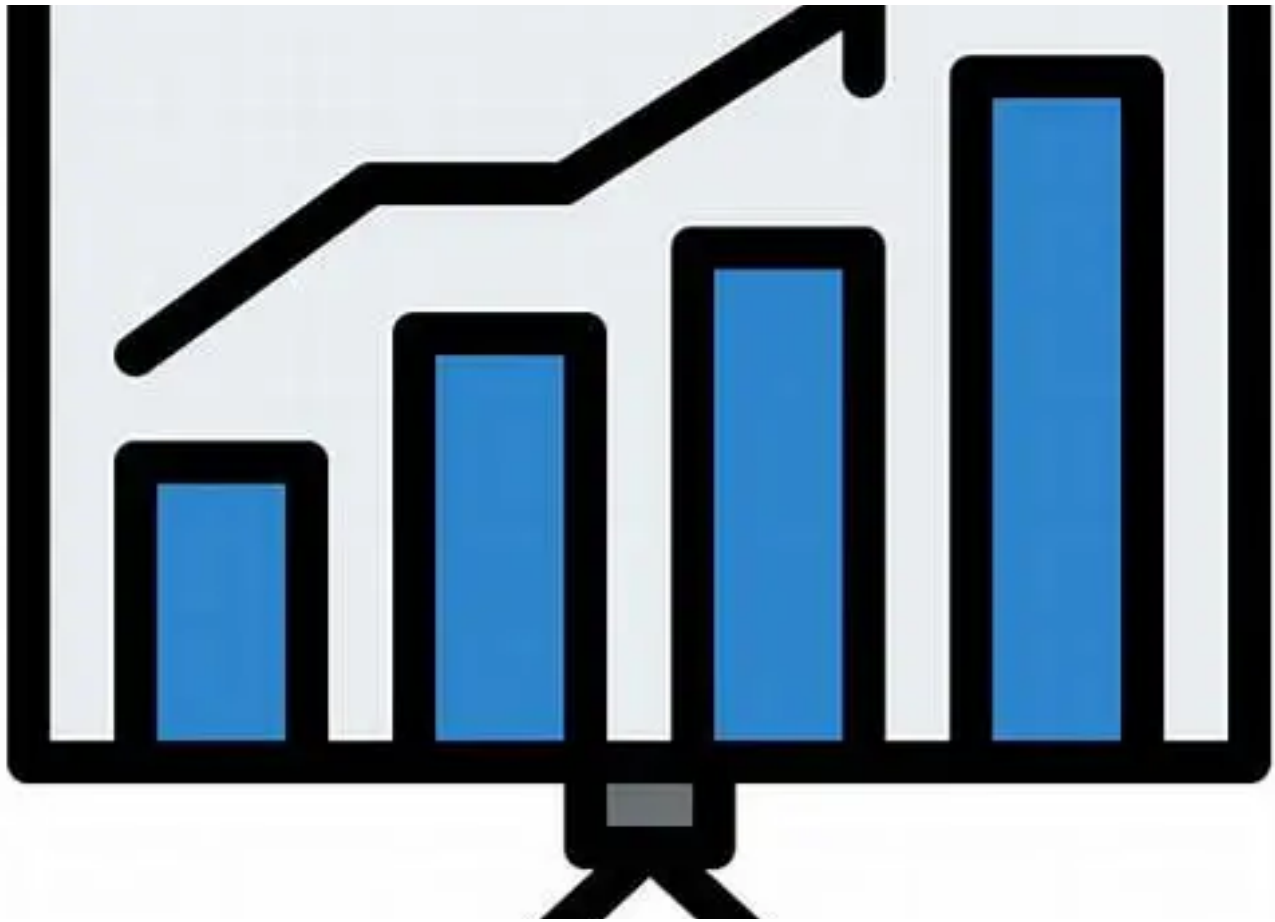
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# Understanding Purchase Trends and Seasonal Variations from a Kaggle Sample Sales Data

Published by **teelfy** on June 28, 2024



I conducted a quick data analysis task during the [HNG Internship 11](#) boot camp, and in this article, I present a few key findings and visuals I was able to deduce from quickly looking at the dataset. This report presents an analysis of sales data collected over a period, focusing on understanding sales trends, customer behavior, and regional dynamics. The dataset encompasses various dimensions, including order details, product lines, customer demographics, and temporal aspects. Key findings from the analysis include regional shipment insights, product line performance, seasonal purchase trends, and customer engagement/strategies.

## Introduction

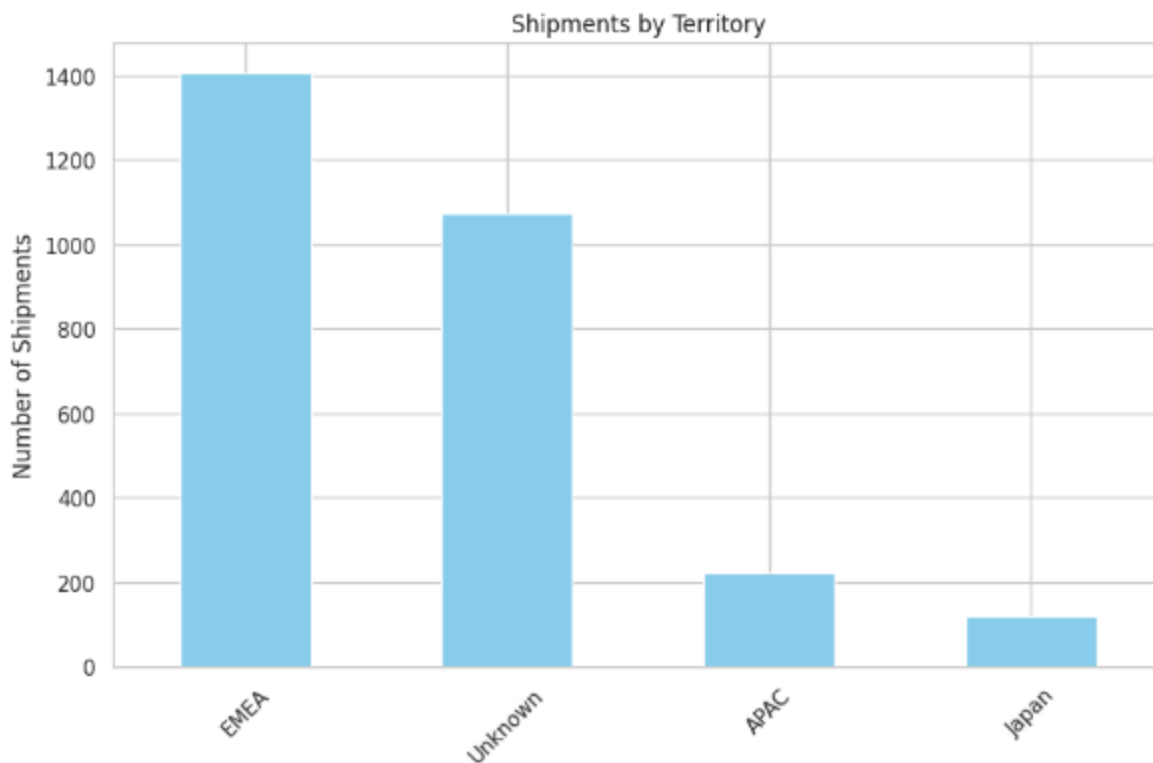
The analysis presented in this report delves into a comprehensive sales dataset that serves as a robust foundation for understanding various facets of retail operations. Originally curated by María Carina Roldán, a BI consultant and esteemed member of the Pentaho Community, this dataset is instrumental in segmentation, customer analytics, clustering, and other strategic insights crucial for retail analytics.

The dataset encompasses a wide array of critical information, including detailed order data, sales figures, customer demographics, and shipping details. Originally intended for use with Pentaho DI Kettle, its adaptability extends beyond its original purpose, making it invaluable for sales simulation training and deepening insights into retail dynamics.

This report builds upon the foundational work laid out by María Carina Roldán, enhanced through subsequent modifications by Gus Segura in June 2014. By leveraging advanced data analysis techniques and visualizations, this report aims to uncover actionable insights that can drive informed decision-making and optimize business strategies within the retail sector.

## Observation

The analysis reveals several key insights into the sales dynamics of the dataset. EMEA emerges as the region with the highest shipment volume, totaling 1407 shipments. November stands out as the most frequent month for purchases from EMEA, suggesting seasonal peaks in consumer activity. Additionally, the peak year for shipments was 2004.

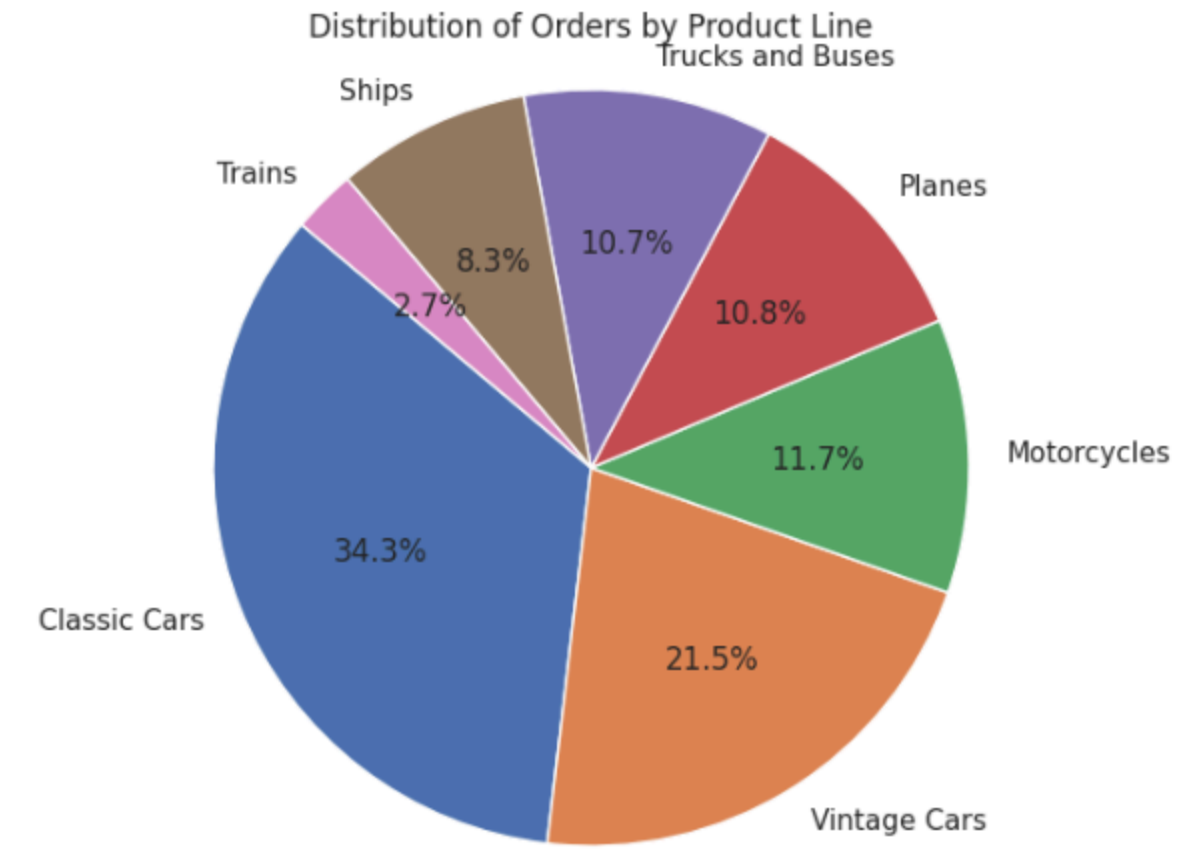


Bar chart of shipment by region

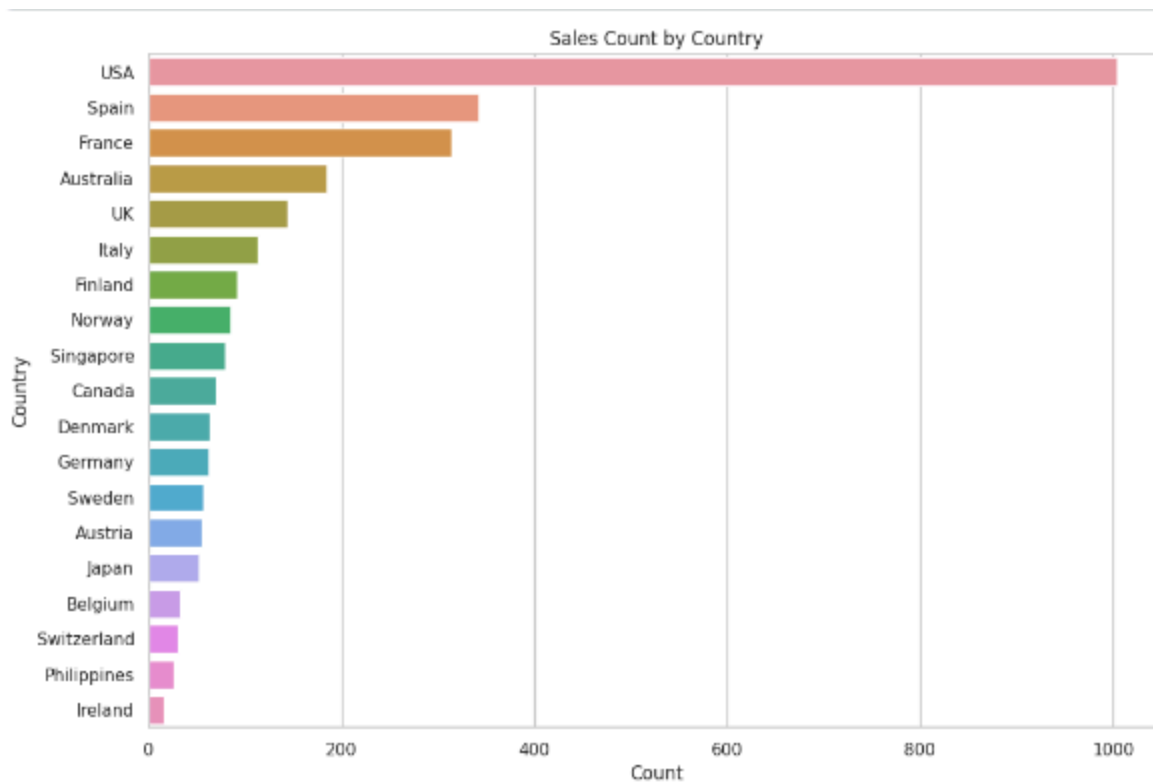


Visualization of monthly sales in the EMEA region

Classic cars and vintage cars are identified as the most frequently shipped items, indicating strong demand for these product categories. Interestingly, the analysis shows a trend where higher average purchase prices correlate with lower quantities ordered, underscoring the value-driven purchasing behavior within the dataset.



Geographically, shipments are predominantly directed to the USA, followed by Spain and France, highlighting these countries as key markets. Finally, the average price range for orders spans from \$83.66 to \$100.00, with classic cars commanding the highest average purchase price at \$4053.38, reflecting their premium status among customers. These observations provide valuable insights into regional preferences, product performance, and pricing dynamics, essential for refining sales strategies and optimizing market targeting efforts.



Sales by country

## Conclusion

The quick analysis of the sales dataset has yielded valuable insights into various facets of sales operations and customer behavior. Key findings highlight EMEA as the dominant region in terms of shipment volume, with 1407 shipments recorded. November emerges as the peak month for purchases from this region, aligning with seasonal consumer trends. The year 2004 saw the highest number of shipments, underscoring historical peaks in sales activity.

Product-wise, classic cars and vintage cars stand out as the most shipped items, indicative of strong market demand and consumer preference for nostalgic automotive products. A notable trend reveals that higher average purchase prices correlate with lower quantities ordered, suggesting a strategic focus on value-driven purchases among customers.

Geographically, the analysis identifies the USA, Spain, and France as the primary destinations for shipments, underscoring these countries' pivotal roles in the distribution

network. This insight provides strategic guidance for targeting and expanding market reach effectively.



sales vs quantity ordered

In terms of pricing dynamics, the average order price ranges between \$83.66 and \$100.00, with classic cars commanding the highest average purchase price of \$4053.38. This premium pricing reflects the perceived value and appeal of classic automotive collectibles among customers.

Overall, these findings offer actionable insights for optimizing sales strategies, enhancing product offerings, and refining market segmentation approaches. By leveraging these insights, businesses can capitalize on regional preferences, product performance trends, and pricing strategies to drive growth, enhance customer satisfaction, and sustain competitive advantage in the dynamic retail landscape.

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