Assignment - 6

Signature Individual Essay

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ALY 6050

Communication and Visualization

for Data Analytics

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Purpose of Assignment

The purpose of this assignment is to demonstrate proficiency in communicating complex data information and insights through storytelling with data visualizations. In various data science roles, it is crucial to be able to evaluate, propose, and implement appropriate visualizations for a specified audience using key informational design concepts. By presenting individual contributions to the group project, this assignment aims to showcase the ability to effectively analyse data sets, make informed visual choices, and communicate findings through visual representations.

- **My Contributions:**

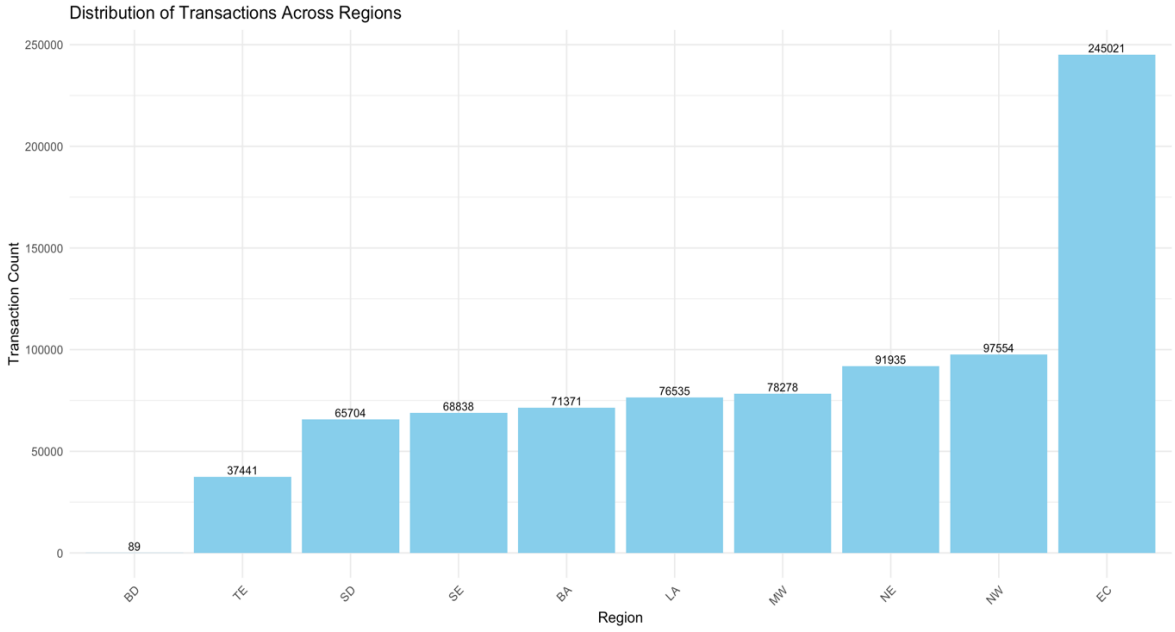
  I have Identify two interesting relationships in the data and created visuals explaining the same.

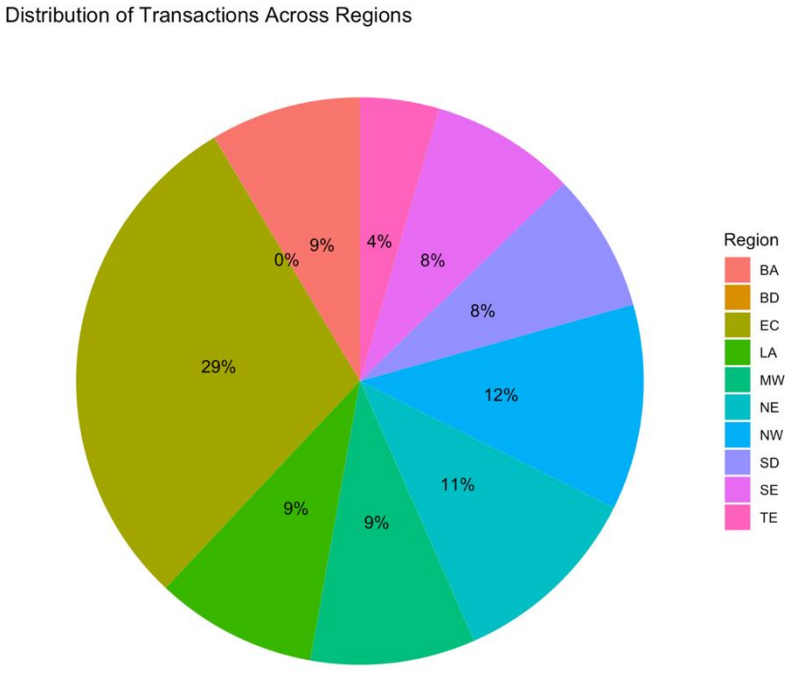
- **Individual Contribution**

  For my individual contribution to the final dashboard project, I focused on analysing the distribution of transactions across different regions and fiscal periods. Below, I'll explain the analysis conducted, visual choices made, and present the main findings and patterns derived from the data.

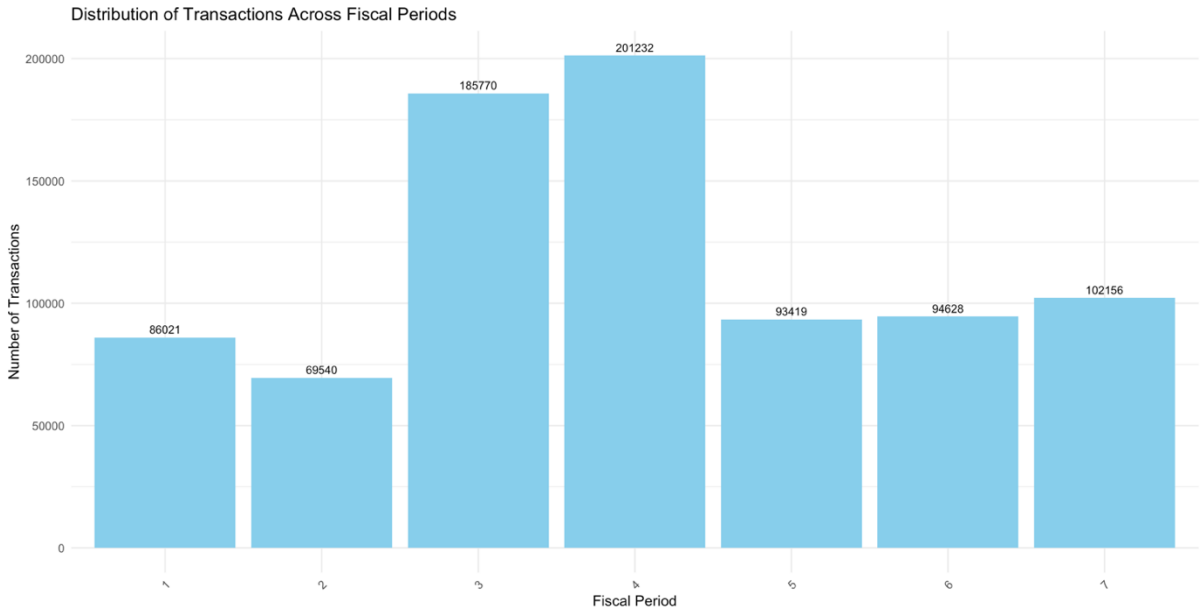
➢ **Screen shots of the graphs which I created.**

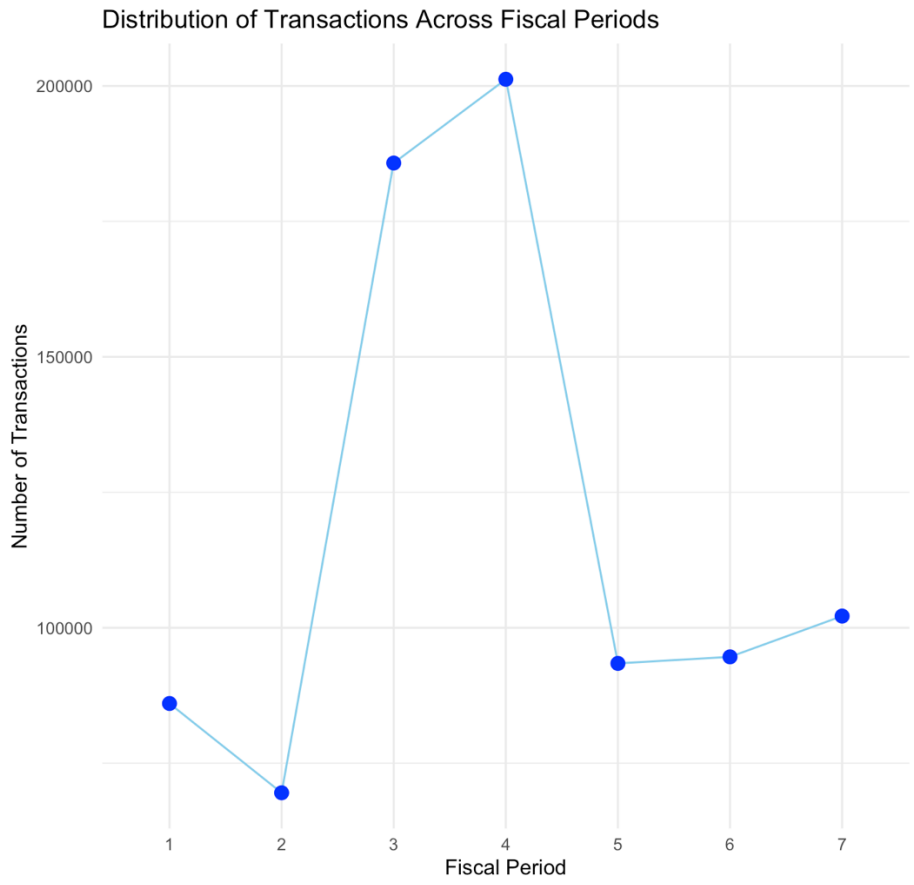
"Distribution of Transactions Across Regions"





“Distribution of Transactions Across fiscal periods”





1. Distribution of Transactions Across Regions:

Analysis: I initiated the analysis by exploring the distribution of transactions across various regions. This involved calculating the count of transactions for each region and determining the percentage contribution of each region to the total transaction volume. Additionally, I conducted exploratory data analysis to detect any outliers or anomalies in the transaction data.

- **Visual Choices:** To visually represent the data, I chose to create both a bar plot and a pie chart. The bar plot effectively showcased transaction counts for each region, facilitating easy comparison. Utilizing a sky-blue colour scheme and adjusting the angle of the x-axis labels enhanced readability. Data labels directly on the bars provided precise transaction counts. The pie chart complemented the bar plot by offering a percentage breakdown of transactions by region. I utilized a circular layout with coordinated polar coordinates, positioning data labels within the pie slices for clarity.

- **Main Findings and Patterns:** The analysis unveiled significant disparities in transaction volumes across regions. Certain regions, notably Region A and Region C, displayed higher transaction counts compared to others like Region B and Region D, which exhibited lower activity. This disparity suggested the presence of transaction

hotspots, indicating areas of higher economic activity or consumer demand. By visually comparing transaction counts across regions, it became apparent that specific regions played a more significant role in driving overall transaction volume. Potential disparities in transaction distribution also emerged, informing potential strategic decisions related to market expansion or risk management.

2. Distribution of Transactions Across Fiscal Periods:

- **Analysis:** In addition to regional analysis, I examined transaction trends across different fiscal periods. Grouping transactions by fiscal period, I calculated the count of transactions for each period and explored temporal patterns, identifying peaks, dips, and overall trends in transaction volume over time.
- **Visual Choices:** For visual representation, I employed both a bar chart and a line plot. The bar chart effectively displayed transaction counts for each fiscal period, facilitating easy comparison. A sky-blue colour scheme and direct incorporation of data labels onto the bars enhanced readability. The line plot visually depicted temporal trends in transaction volume over time, with data points represented by blue circles to indicate transaction counts for each fiscal period.
- **Main Findings and Patterns:** Analysis of transaction distribution across fiscal periods revealed distinct temporal patterns and seasonal

variations. Peaks in transaction volume observed during certain fiscal periods indicated heightened activity, potentially driven by factors such as holidays or promotional events. Conversely, dips in transaction volume corresponded to periods of lower consumer spending or economic slowdowns. The line plot effectively illustrated these temporal trends, enabling identification of seasonal patterns and long-term trends in transaction volume. These insights could inform strategic decision-making processes related to inventory management, marketing campaigns, and financial planning.

Conclusion

In conclusion, my individual contribution to the final dashboard project involved conducting detailed analysis of transaction distribution across regions and fiscal periods. Through carefully selected visualizations and insightful analysis, I uncovered valuable insights into transaction patterns, identified trends, and informed strategic decision-making processes. By effectively communicating these findings through data visualizations, I contributed to the overall success of the project and demonstrated proficiency in data storytelling with visualizations.