Sales Dashboard Analysis for Transportation Company

January 2003-December 2004

1. **Project Overview**

   This sales dashboard analysis provides key business metrics and trends for a transportation company, covering the period from January 2003 to December 2004. It offers insights into sales, profits, regional performance, and customer distribution.

   The purpose of this dashboard is to point out the top-performing products, low-margin products, regional analysis and sales trends.

   The Excel file includes the dashboard, raw data, cleaned data and the pivot tables and charts used.

2. **Data Preparation**

   The data preparation and cleansing process involved several key steps to ensure the dataset was consistent, accurate, and ready for analysis. Below are the specific tasks performed:

   2.1. Checked for Duplicates

   - A check was performed to ensure there were no duplicate records in the dataset. No duplicates were found, ensuring the integrity of the data.

   2.2. Checked for Empty Cells

   - Empty cells were identified and handled appropriately. In cases where data was missing, relevant actions were taken, such as filling empty fields with appropriate values or marking them for further review.

   - The columns "Address Line 2" and "Postal Code" contained empty cells, which were filled with the placeholder value "N/A" to ensure no missing data would impact the analysis.

   2.3. Converted US Dates to EU Dates

   - The dates in the dataset were initially in the US format (MM/DD/YYYY). To convert these to the European format (DD/MM/YYYY), the "Text to Columns" function was used to separate the month, day, and year. This allowed for easy rearrangement into the correct format.

   2.4. Checked Month ID and Year ID

   - Month ID was extracted using the MONTH(Order_Date) function, which retrieves the month number (1-12) from the Order_Date column.

   - Year ID was extracted using the YEAR(Order_Date) function, which pulls the year from the Order_Date column.

   2.5. Converted Cells to the Right Formats

   - All columns were checked and converted to the appropriate data types (e.g., date format for Order_Date, numeric format for quantities, etc.) to ensure consistency and compatibility with analysis functions.

2.6. Standardized the decimal separation symbol
- In the dataset, some numbers were using dots as decimal separators (e.g., 12.34). These were converted to commas (e.g., 12,34) to match the European standard for numeric formatting.

2.7. Checked for Typos in Filters
- Filters, such as "Product Line," were reviewed for any potential typos or inconsistencies. Any discrepancies found were corrected to ensure accurate filtering during analysis.

3. Key Metrics and KPIs

3.1. Total Sales: $8.24 Million
- 2004: 57% ($4.70 Million)
- 2003: 43% ($3.54 Million)

3.2. Total Profits: $1.44 Million
- 2004: 56% ($806,400)
- 2003: 44% ($633,600)

3.3. Number of Customers: 2,345
- 2004: 57% (1,337)
- 2003: 43% (1,008)

3.4. Orders Shipped Successfully: 92.70% or 2345

4. Sales Trends

4.1. Monthly Sales Comparison (2003 vs. 2004):
- The graph shows monthly sales fluctuations for both years.
- 2004 generally outperformed 2003 in terms of monthly sales. - Peak sales months appear to be in the latter half of each year.

4.2. Year-over-Year Growth:
- Sales increased by 32.77% from 2003 to 2004.
- The customer base grew by 32.64% from 2003 to 2004.

5. Product Categories Performance

5.1. Top-performing categories by sales
- Classic Cars
- Vintage Cars
- Trucks and Buses
- Motorcycles

5.2. Profit analysis
- Classic Cars lead in both sales and profits.
- Motorcycles show higher profit margins compared to their sales ranking.
- The highest profit margin: 24.89% on Classic Cars
- The lowest profit margin: 4.55% on Trucks and Buses

6. Customer Analysis

6.1. Top 10 Customers by Sales and Profit:
- Euro Shopping Channel
- Mini Gifts Distributors Ltd.
- Australian Collectors, Co.
- Muscle Machine Inc.
- Dragon Souvenirs Ltd.
- Land of Toys Inc.
- AV Stores, Co.
- Saveley & Henriot, Co.
- Rovelli Gifts
- Online Diecast Creations Co.

6.2. Customer Distribution
- Total unique customers: 2,345
- Year-over-year growth in customer base: 32.64%

7. Insights

7.1. Strong Growth: The company experienced significant growth in sales (32.77%) and customer base (32.64%) from 2003 to 2004.

7.2. Product Focus: Classic Cars and Vintage Cars are the primary revenue drivers, suggesting a strong market for collector's items in the transportation sector.

7.3. Profit Margins: While Classic Cars lead in both sales and profits, Motorcycles show a higher profit margin compared to their sales volume, indicating an opportunity for targeted growth.

7.4. Customer Concentration: The top 10 customers contribute significantly to overall sales and profits, highlighting the importance of key account management.

7.5. Seasonal Trends: Sales appear to peak in the latter half of each year, suggesting potential seasonal demand patterns.

7.6. Operational Efficiency: With a 92.70% successful shipment rate, there's room for improvement in order fulfillment and logistics.

8. Recommendations

8.1. Product Strategy
- Capitalize on the success of Classic Cars and Vintage Cars by expanding these product lines or introducing limited editions to drive sales.
- Investigate the higher profit margins in the Motorcycles category and consider strategies to increase its sales volume.

8.2. Customer Relationship Management
- Develop targeted retention and growth strategies for the top 10 customers to secure and expand their business.

- Implement a tiered customer loyalty program to encourage increased purchases across all customer segments.

8.3. Seasonal Planning

- Align inventory and marketing efforts with observed seasonal trends to maximize sales during peak periods.
- Develop off-season promotions or products to balance revenue throughout the year.

8.4. Operational Improvements

- Aim to improve the order shipment success rate from 92.70% to at least 95% through process optimization and quality control measures.

8.5. Market Expansion

- Given the strong year-over-year growth, explore opportunities to enter new markets or expand the customer base further.

8.6. Data-Driven Decision Making

- Implement more detailed tracking of customer preferences and purchasing patterns to inform product development and marketing strategies.

8.7. Profit Optimization

- Analyze the cost structure of lower-performing categories (e.g., Planes, Ships, Trains) and consider strategies to improve their profitability or potentially phase them out.

9. Sources:

9.1. Dataset

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

9.2. Documentation

https://aph-qualityhandbook.org/set-up-conduct/process-analyze-data/3-2-quantitative-research/3-2-2-data-analysis/data-analysis-documentation/

https://managing-qualitative-data.org/modules/2/a/