

Credit Card Spending Analysis – Business Report (California, 2023)

1. Overview

This dataset represents credit card usage patterns for customers located in California during the year 2023.

It contains detailed information about customers and their spending, including transaction amount, merchant, category, and customer demographics.

This analysis helps businesses understand where customers spend, how much they spend, and what trends drive revenue.

2. Dataset Description

📌 Columns Explained

Column Name Description

CustomerID	Unique customer identifier
Name	Customer's first name
Surname	Customer's last name
Gender	Male/Female
Birthdate	Customer date of birth
Transaction Amount	Dollar amount of each transaction
Date	Date of transaction
MerchantName	Where transaction took place
Category	Expense category (e.g., Travel, Electronics, Market)

3. Data Shape & Quality

Rows: 50,000

Columns: 9

Non-Null Count: All columns have 50,000 non-null values

Data Types: Mix of int, float, and string

The dataset is large, well-formatted, and suitable for deep analysis.

4. Summary of Key Numerical Insights

Transaction Amount (in USD)

Average: \$442.11

Minimum: \$5.01

Maximum: \$2,999.88

This tells us that spending varies widely – from small daily expenses to high-

value purchases.

5. Python Analysis (EDA)

A. Category Analysis – Average Spending

Using a bar plot and aggregation in Python:

Category	Average Spend
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Travel	\$1500
Electronics	\$500
Market	\$250

🔥 Travel is the highest-spending category on average.

B. Outlier Analysis – Box Plot

The box plot shows spending outliers between:

\$1100 → \$3000

These represent high-value transactions—common in Travel and Electronics.

6. SQL Analysis

A. Top Categories by Total Spend (Sum)

Category	Total Spend
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Travel	\$12,900,231
Electronics	\$4,394,092
Market	\$2,151,134

B. Average Spend by Category (SQL)

Category	Avg Spend
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Travel	\$1539
Electronics	\$527
Market	\$256

Python and SQL agree:

Travel, Electronics, and Market are the top categories.

7. Gender Spending Analysis

From SQL queries:

Female customers spent the most: \$11 million total

Male customers spent less comparatively

This indicates:

Higher transaction frequency

Higher average spending per woman

Strong potential for targeted marketing

8. Final Business Insights

1 Travel is the dominant revenue driver

Customers spent the most on:

Flights

Hotels

Travel agencies

Travel alone contributes over 12.9 million USD.

2 Electronics is the second-highest spending category

Strong spending on:

Laptops

Mobiles

Gadgets

Often linked with festive seasons and online sales.

3 Market (Groceries, Essentials) shows daily stable spending

Lower ticket size but very high transaction volume.

4 High-value outliers (\$1,100 - \$3,000)

These transactions heavily influence revenue

→ Mostly Travel & Electronics

5 Female customers drive revenue

Women spent \$11M, making them the most profitable segment.

Marketing recommendation:

Provide cashback, reward points, targeted offers

9. Conclusion

This analysis reveals strong spending patterns across categories and demographics.

It highlights:

Where customers spend most

Who the highest contributors are

Which categories drive monthly revenue

High-value outlier transactions

Which customer segments should be targeted

This end-to-end EDA can help companies create smarter credit card campaigns, reduce fraud, and increase customer engagement.