

INTERACTION

\$21,369K

TOTAL SALES

\$4,268K

PROFIT

6,039

CUSTOMERS

10,000

ORDERS

54,994

QUANTITY

Select KPI Metric

\$ Sales

Select main metric for KPI analysis

FILTERS

Country

(All)

Category

(All)

Payment Method

(All)

Return Status

(All)

Shipping Method

(All)

Review Stars

 (All) ★★★★★ ★★★★★ ★★★★★ ★★★★★

\$ Sales - KPI Analysis

COUNTRY - \$ Sales

USA	\$393,084.1
UK	\$315,612.0
Canada	\$310,536.9
Germany	\$273,831.3
France	\$175,940.7

CATEGORY - \$ Sales

Books	\$430,337.4
Clothing	\$309,928.4
Home	\$289,331.9
Electronics	\$170,467.5
Sports	\$158,939.9

PAYMENTS - \$ Sales

PayPal	\$419,213.5
Cash	\$394,445.2
Bank Transfer	\$318,115.9
Credit Card	\$237,230.5

REVIEWS - \$ Sales

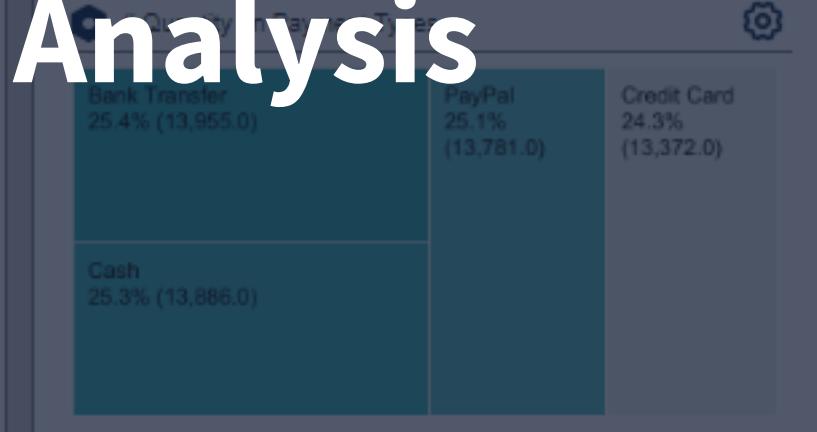
★★★★★	\$351,309.5
★★★★☆	\$310,667.1
★★★★☆	\$285,512.4
★★☆☆☆	\$419,482.1
★☆☆☆☆	\$202,034.0

SHIPMENT - \$ Sales

Standard	\$283,824.8
Express	\$168,857.5
Next Day	\$916,322.8

Retail Transaction Data Analysis

Key Insights & Recommendations



Product Table

Product

Product ID	# Orders	Total Sales	Quantity	Profit	Avg. Discount	Avg. Price	Profit/Unit	Shipping Cost	Shipping Cost/Unit
516	20	\$53,992.8	138	\$11,061.0	25.0%	\$538.6	\$80.2	\$469.6	\$3.4
666	19	\$29,292.4	73	\$6,272.7	21.8%	\$524.3	\$85.9	\$383.1	\$5.2
650	19	\$40,644.0	106	\$8,232.2	22.1%	\$448.7	\$77.7	\$376.0	\$3.5
198	19	\$39,491.2	106	\$7,565.4	22.9%	\$511.6	\$71.4	\$419.5	\$4.0

Analysis Overview

Data Sources

- 📅 Retail transaction data
- ⚡ Customer response data

Analysis Approach

- 🔧 Data preprocessing & cleaning
- 🔍 Exploratory data analysis
- ⚡ Advanced analytics (RFM, Time Series)

Key Objectives

- 👤 Understand **customer behavior**
- ⚡ Identify sales **trends**
- 💡 Provide actionable insights



PREDIK
Data-Driven

Data Preprocessing & Cleaning

↗ Data Integration

- ⌚ Merged transaction and response datasets
- ⌚ Joined on **customer_id** field

🧹 Data Cleaning

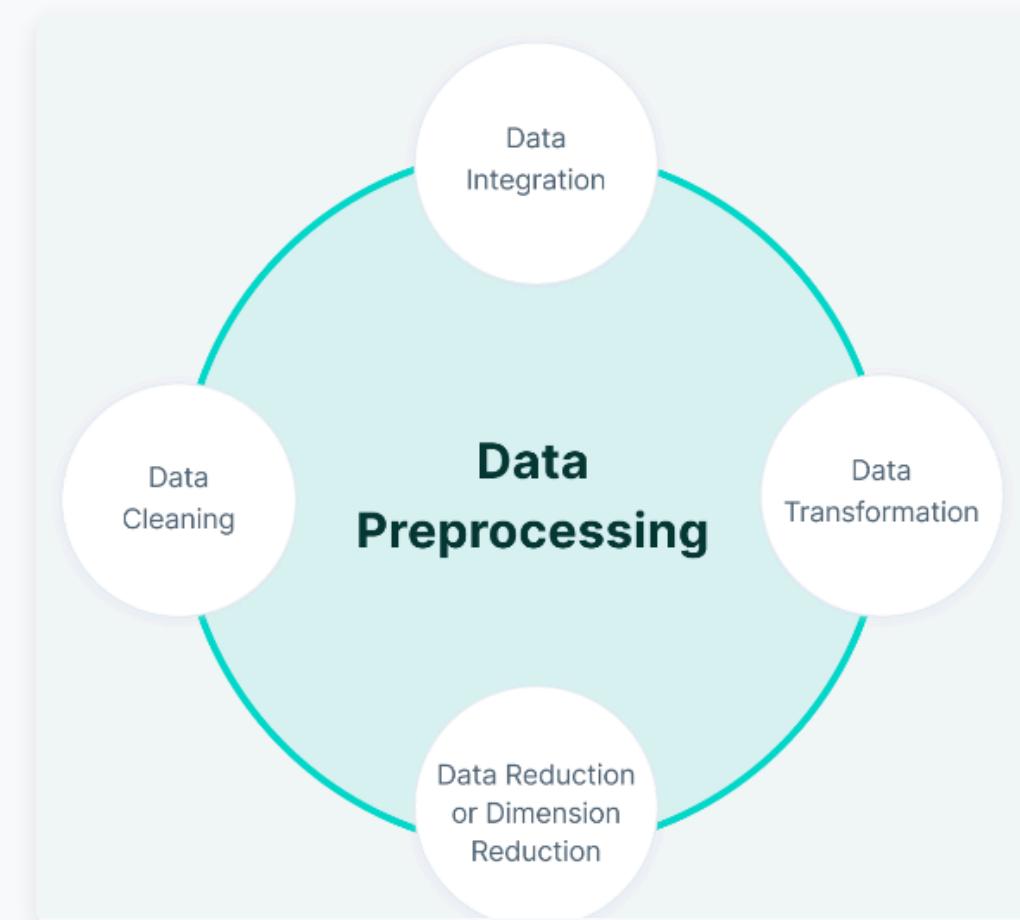
- 🔗 Handled missing values in response column
- ✓ 31 null values filled with **0**

🔄 Data Transformation

- 📅 Converted trans_date to **datetime**
- 🔢 Converted response to **int64**

喤 Outlier Detection

- 喤 Applied **z-score** method
- ✓ No significant outliers detected



Key Findings

📅 Top Months

- ↗️ August, October, and January have the highest transaction amounts
- \$ August leads with **\$726,921** in total sales

👤 Top Customers

- ⭐ CS4424 has the highest order count (39)
- 🛒 Same customer leads with **\$2,933** in total sales

↗️ Yearly Trends

- ↗️ 2013 had the highest total transactions
- \$ Total sales of **\$2,137,368** in 2013

📊 Data Distribution

- ✓ No significant outliers detected
- Transaction amounts and response values are **normally distributed**



Monthly Transaction Trends

Analysis Period

January 2011 to March 2015

50+ months of transaction data analyzed

Seasonal Patterns

Clear seasonal variations in transaction amounts

Consistent patterns across multiple years

Peak Periods

August, October, and January show highest volumes

Monthly peaks range from \$724,107 to \$726,921

Trend Analysis

Overall volume shows slight variations

No dramatic growth or decline observed



Time Series Graph Examples: Analyzing Time-Based Data

RFM Analysis & Customer Segments

RFM Model

- ⌚ **Recency:** Most recent purchase date
- ⇄ **Frequency:** Number of purchases
- \$ **Monetary:** Total transaction value

Segment Definitions

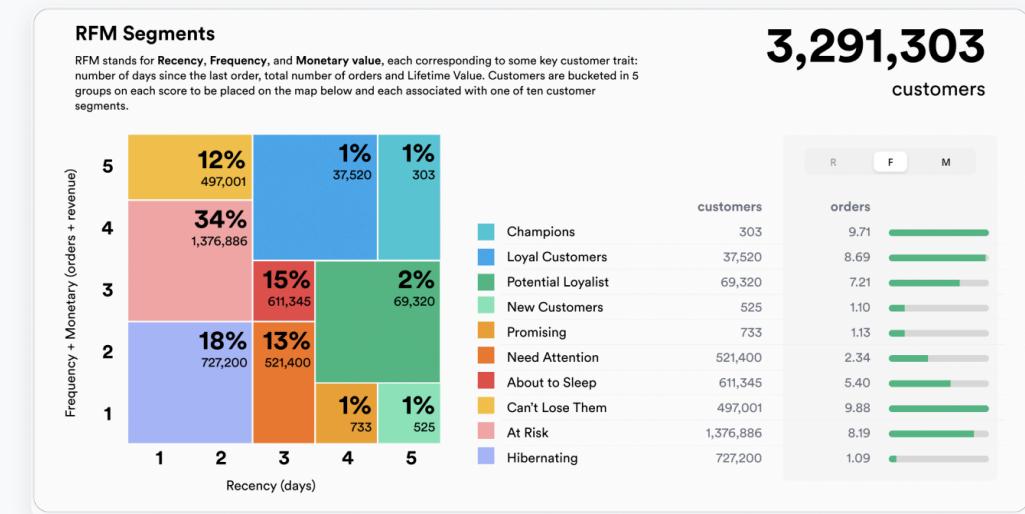
- ★ **P0:** 2015+ recent, 15+ orders, \$1000+ sales
- **P1:** 2014 recent, 10-15 orders, \$500-1000 sales
- **P2:** All other customers

Segment Distribution

- ⌚ Three **distinct customer groups** identified
- ⇄ Clear separation in purchasing behavior

Strategic Value

- 📢 Different segments require **different marketing approaches**
- ↗ Opportunity to convert P2 to higher segments



Customer Churn Analysis

👤 Churn Rate

- ✗ 111,158 churned customers (response=0)
- ✓ 13,842 active customers (response=1)

📊 Churn Percentage

- ⚠ Approximately 89% of customers have churned
- ✗ Only 11% of customers remain active

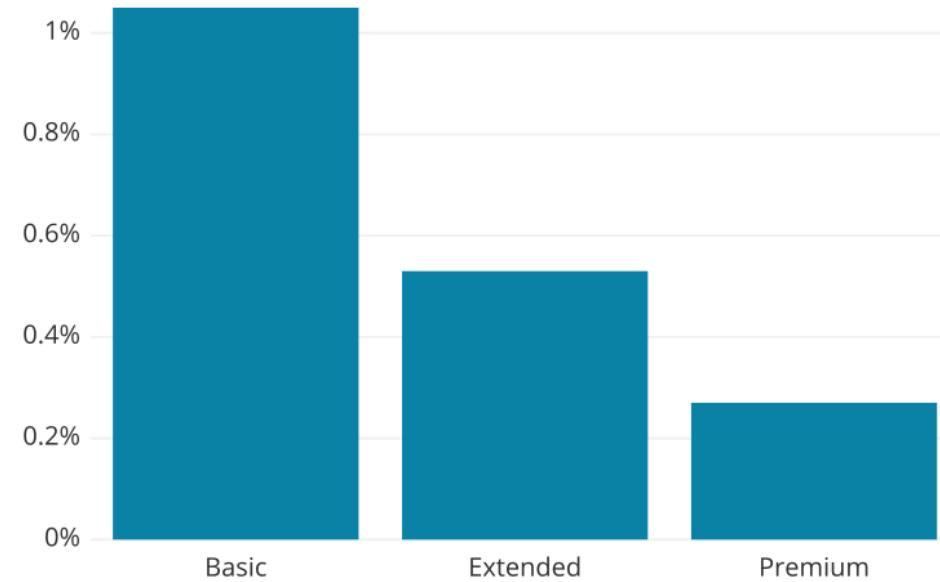
★ Top Customer Analysis

- ↗ Top 5 customers show consistent purchasing patterns
- ⌚ Regular transaction intervals throughout the year

💡 Retention Opportunity

- 📣 Significant opportunity to re-engage churned customers
- 👤 Targeted campaigns could reactivate dormant segments

Churn Rate by Account Type



Strategic Recommendations

 Seasonal Marketing

- ▶ Focus campaigns on **August**, **October**, and **January**
 - ↗ Align promotions with peak transaction periods

Customer Retention

- 🕒 Implement **re-engagement strategies** for 89% churned customers
 - ✉️ Targeted offers based on previous purchase history

VIP Program

- ➡ Develop exclusive programs for **high-value customers**
 - ➡ Prioritize PO segment with premium benefits

Data-Driven Decisions

- ⌚ Continue **regular analysis** to identify trends
 - ↗ Track segment performance and adjust strategies

