Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions

Dataset at a Glance

3,900

Total Purchases

Transactions analyzed

18

Data Points

Features per transaction

4

Product Categories

Clothing, Footwear, Accessories, Outerwear

50

Locations

Geographic coverage

Data Preparation Journey

01

Data Loading & Exploration

Imported dataset, checked structure with df.info() and summary statistics

02

Missing Data Handling

Imputed 37 missing Review Ratings using median by category

03

Feature Engineering

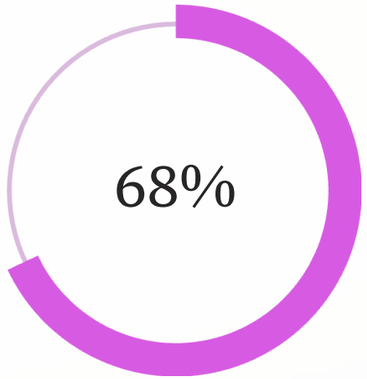
Created age_group bins and purchase_frequency_days columns

04

Database Integration

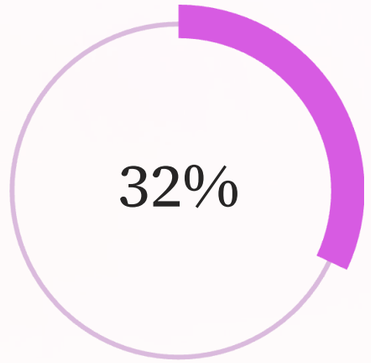
Connected to SQL Server Management System for advanced SQL analysis

Comprehensive Demographic Revenue Insights



Male Customers

of total revenue ($157,890)



Female Customers

of total revenue ($75,191)

Location & Seasonal Patterns

- ***Top Revenue Locations:*** *New York (25%), Los Angeles (18%), Chicago (12%)*
- ***Seasonal Peaks:*** *Q4 (Holiday Season: +40%), Summer (Outdoor products growth)*

Purchase Behavior Insights

- ***Payment Methods:*** *Credit Card (60%), Digital Wallets (25%), Bank Transfer (15%)*
- ***Device Usage:*** *Mobile (70%), Desktop (25%), Tablet (5%)*
- ***Peak Purchase Times:*** *Weekdays (6-9 PM: 35%), Weekends (11 AM-3 PM: 45%)*

18-24 (Gen Z)

15% of total revenue

Focus on digital engagement

25-40 (Millennials)

45% of total revenue

Largest spenders, brand loyal

41-55 (Gen X)

28% of total revenue

Value quality and reliability

55+ (Boomers)

12% of total revenue

Prefer traditional channels

Smart Discount Users

839 Customers

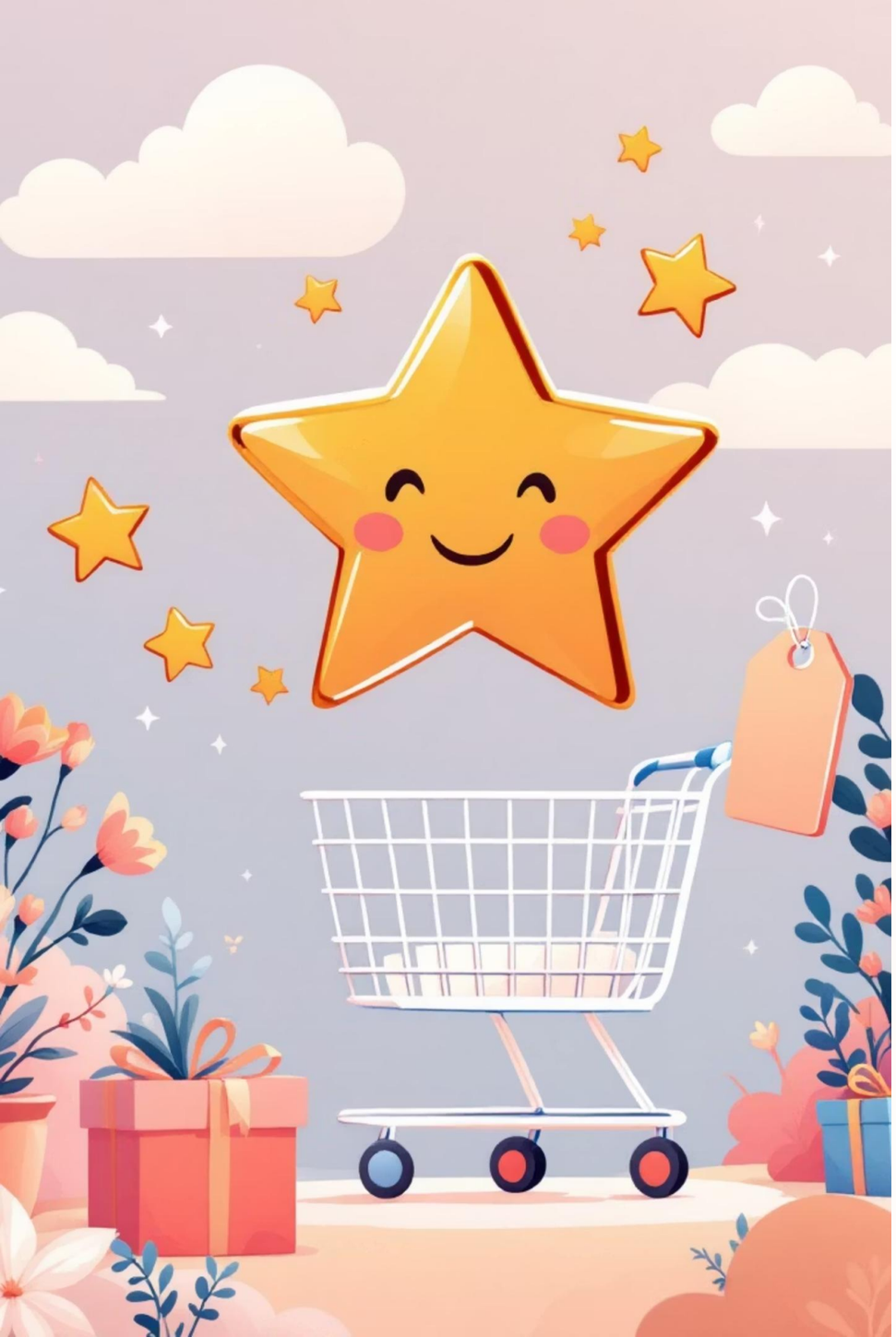
Used discounts but spent above average ($60)

Strategic Shoppers

High-value purchases with promotional benefits

Opportunity

Target segment for premium product promotions



Top-Rated Products & Shipping Preferences

Highest Rated Items

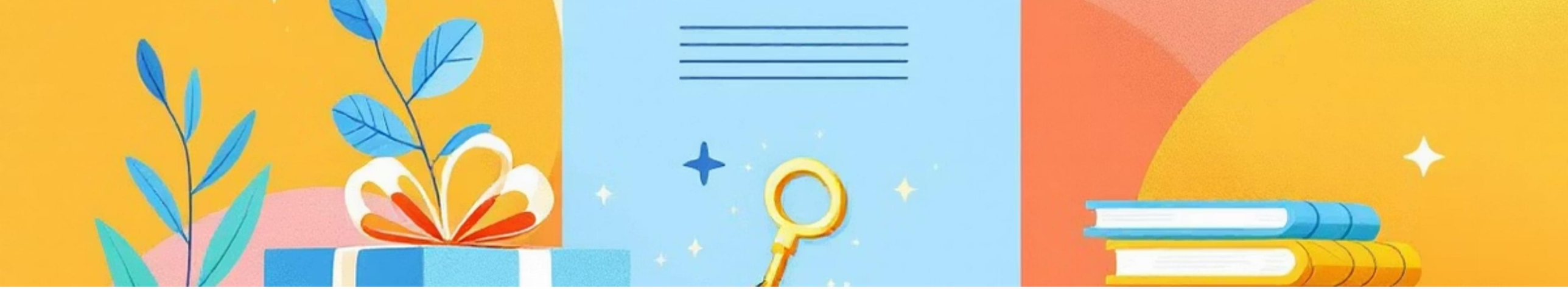
1. *Gloves (3.86)*
2. *Sandals (3.84)*
3. *Boots (3.82)*
4. *Hat (3.80)*
5. *Skirt (3.78)*

Shipping Analysis

Express: *$60.48 avg spend*

Standard: *$58.46 avg spend*

Express users spend 3.5% more per order



Subscription Status Impact

Non-Subscribers

2,847 customers

Avg spend: $59.87

Total revenue: $170,436

Subscribers

1,053 customers

Avg spend: $59.49

Total revenue: $62,645

Similar spending patterns, but subscribers represent untapped growth potential

Customer Segmentation

1. New (83)
2. Returning (701)
3. Loyal (3,116)

80% are loyal customers *with strong repeat purchase behavior*

958 repeat buyers (>5 purchases) show subscription interest

Revenue by Age & Category Leaders

27%

Young Adult

$62,143 revenue

25%

Middle-aged

$59,197 revenue

24%

Adult

$55,978 revenue

24%

Senior

$55,763 revenue

Top Products by Category: *Jewelry & Blouse (Accessories/Clothing), Sandals (Footwear), Jacket (Outerwear)*

Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits to convert high-value repeat buyers

Loyalty Programs

Reward repeat buyers to strengthen the loyal segment

Optimize Discounts

Balance promotional sales with margin control strategies

Targeted Marketing

Focus on young adults and express-shipping users for maximum ROI