



Customer Shopping Behavior Analysis

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

Why Analyze Customer Shopping Behavior?



Deep Understanding

Understanding how customers shop reveals the true motivations behind their purchases



Tailored Marketing

Enables personalized marketing strategies, optimized product offerings, and improved customer retention



ROI Boost

Data-driven insights reduce guesswork and significantly boost ROI in competitive retail markets



Dataset Overview

3,900

Total Purchases

Comprehensive transaction data

18

Data Columns

Customer demographics & behavior

37

Missing Values

Only in Review Rating column

Rich Data Foundation



Customer Demographics

Age, gender, and location



Purchase Details

Item category, amount, seasonality,
payment method

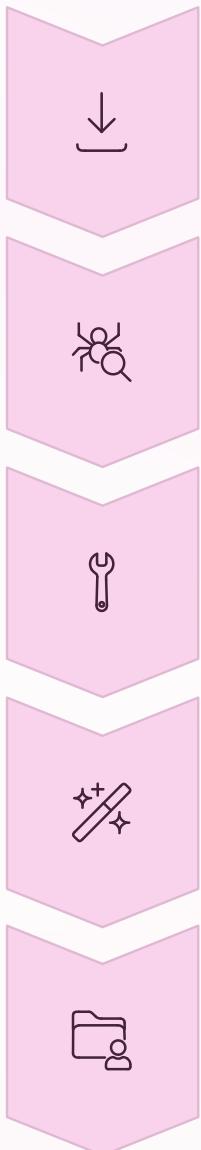


Behavioral Data

Frequency, subscription status, promo
code usage

Data Preparation Process

A systematic five-step approach to transform raw data into actionable insights



Data Loading

Imported dataset using pandas for efficient processing and analysis

Initial Exploration

Structure check and comprehensive summary statistics review

Missing Data Handling

Imputed Review Rating with median values to ensure data completeness

Feature Engineering

Created age groups and purchase frequency segments for deeper analysis

Database Integration

Connected to PostgreSQL for scalable analysis and querying



Demographic Patterns Shape Buying Decisions

Age-Driven Preferences

Younger customers favor tech & fashion with higher digital engagement, while older demographics prefer home goods and traditional categories

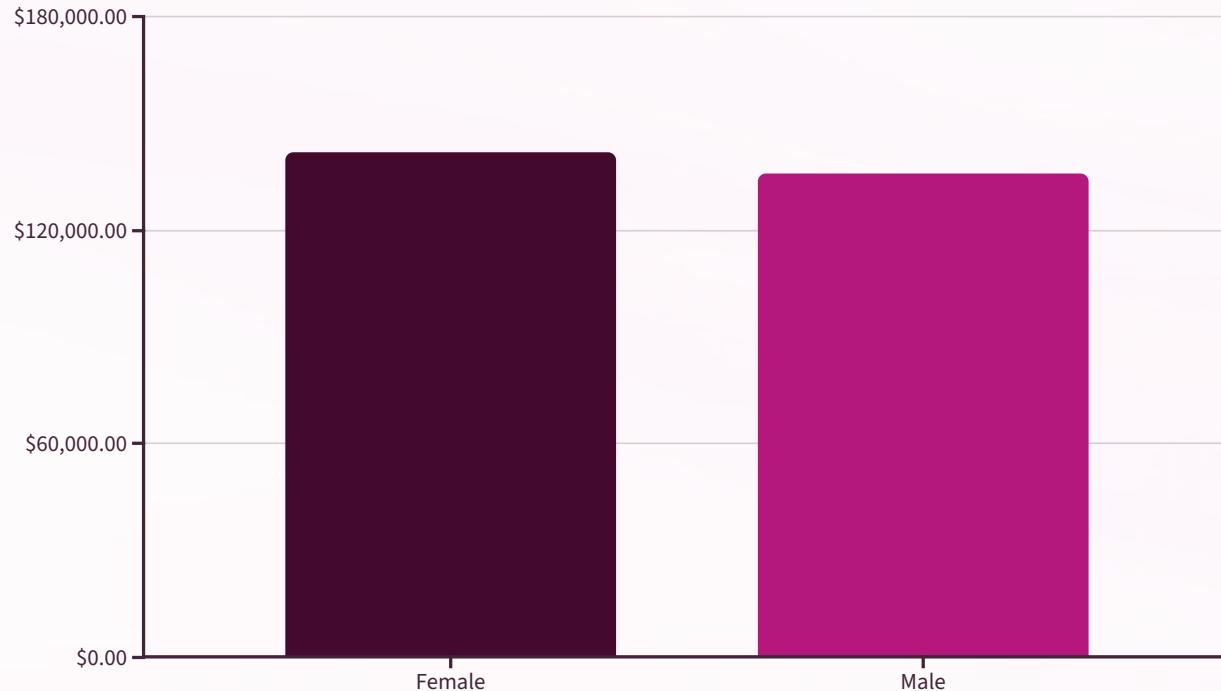
Gender Influence

Females lean towards apparel & beauty products, contributing higher transaction frequency. Males show preference for electronics & sports equipment

Regional Trends

Location impacts purchase volume and product mix significantly, revealing distinct regional preferences and market opportunities

Revenue by Gender Analysis



Key Insight

Female customers generate slightly higher total revenue than male customers.

Gender-based marketing strategies could optimize revenue streams and improve targeting effectiveness.



The Power of Promotions & Discounts

42%

Discount Usage

Of purchases involved discounts or
promo codes

18%

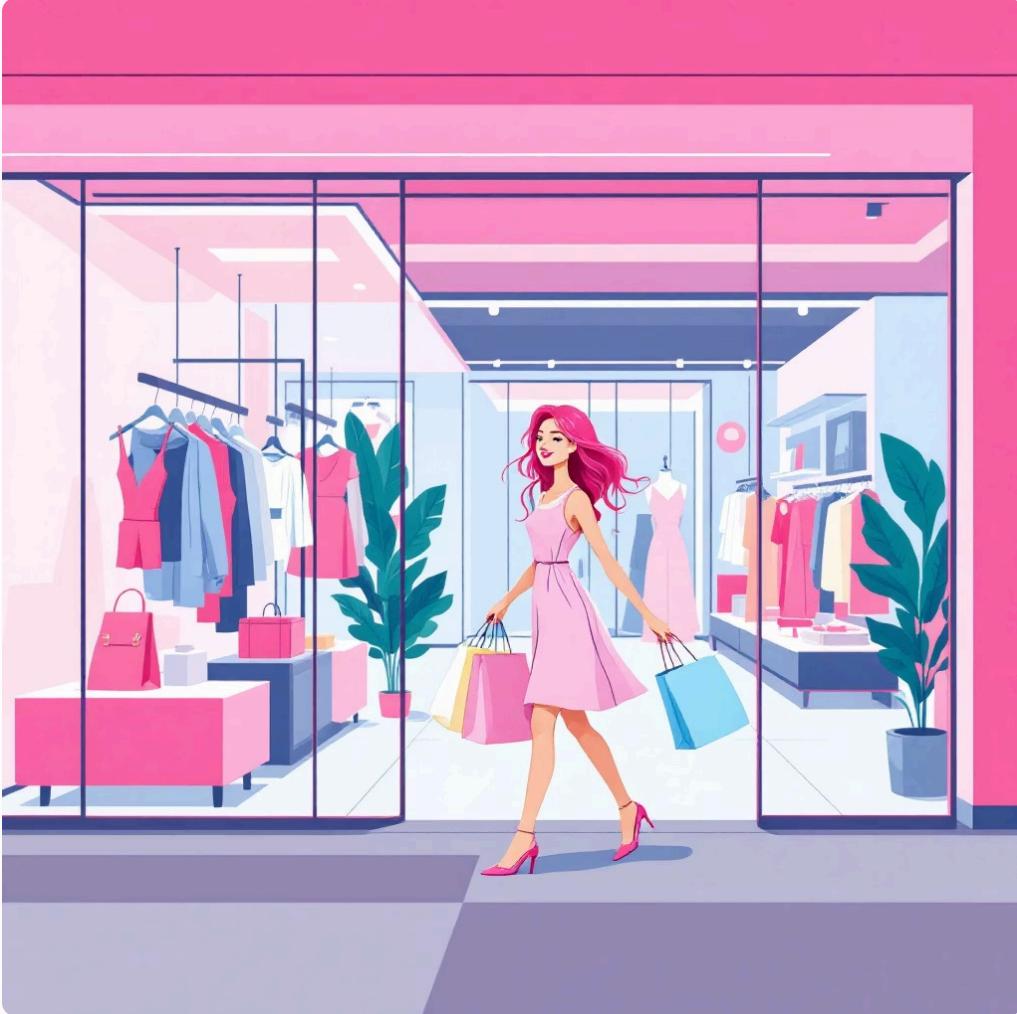
Basket Size Increase

Higher average spend with
promotional offers

Strategic Promotional Impact

- Seasonal sales drive significant spikes in purchase frequency and higher spending during holiday periods
- Subscribers and frequent buyers more likely to use promotions, boosting retention and lifetime value
- Strategic timing of discounts maximizes revenue while maintaining healthy profit margins

High-Value Discount Users



Smart Shoppers

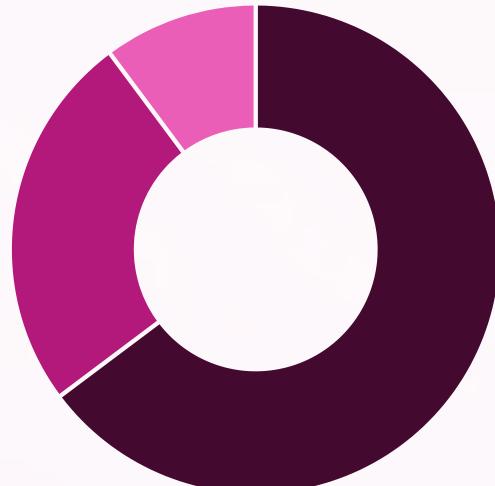
High spenders who maximize value with discounts, combining premium purchases with strategic savings

Strategic Opportunity

Target premium customers with exclusive offers, early access, and VIP rewards to deepen loyalty and increase share of wallet

Payment Methods & Shipping Preferences

Payment Distribution



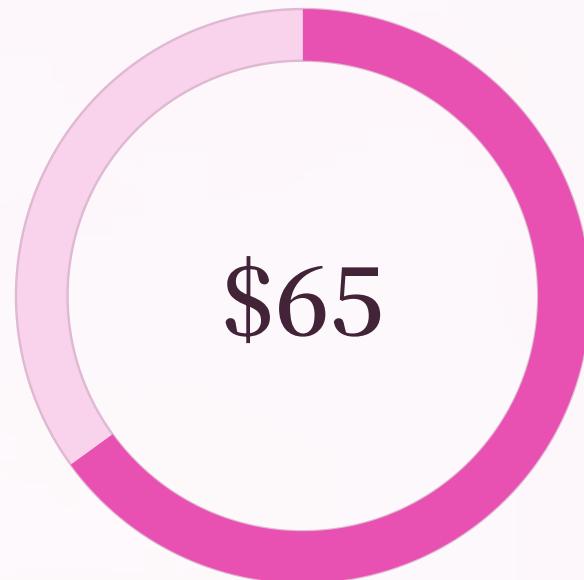
Credit Cards

Digital Wallets

Other Methods

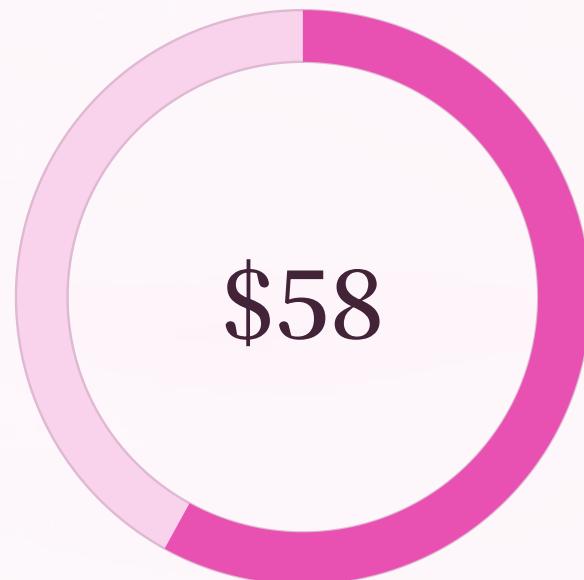
Credit cards dominate checkout preferences, influencing speed and cart abandonment rates

Shipping Impact on Spending



Express Shipping

Average purchase amount



Standard Shipping

Average purchase amount



Express shipping customers spend 12% more per transaction and show higher satisfaction ratings

Top-Rated Products

Customer satisfaction drives repeat purchases and brand advocacy

★ 5.0 – Blouse

Highest customer satisfaction with exceptional quality and fit

★ 5.0 – Dress

Consistently excellent reviews across all customer segments

★ 4.0 – Shirt

Strong customer approval with reliable quality standards