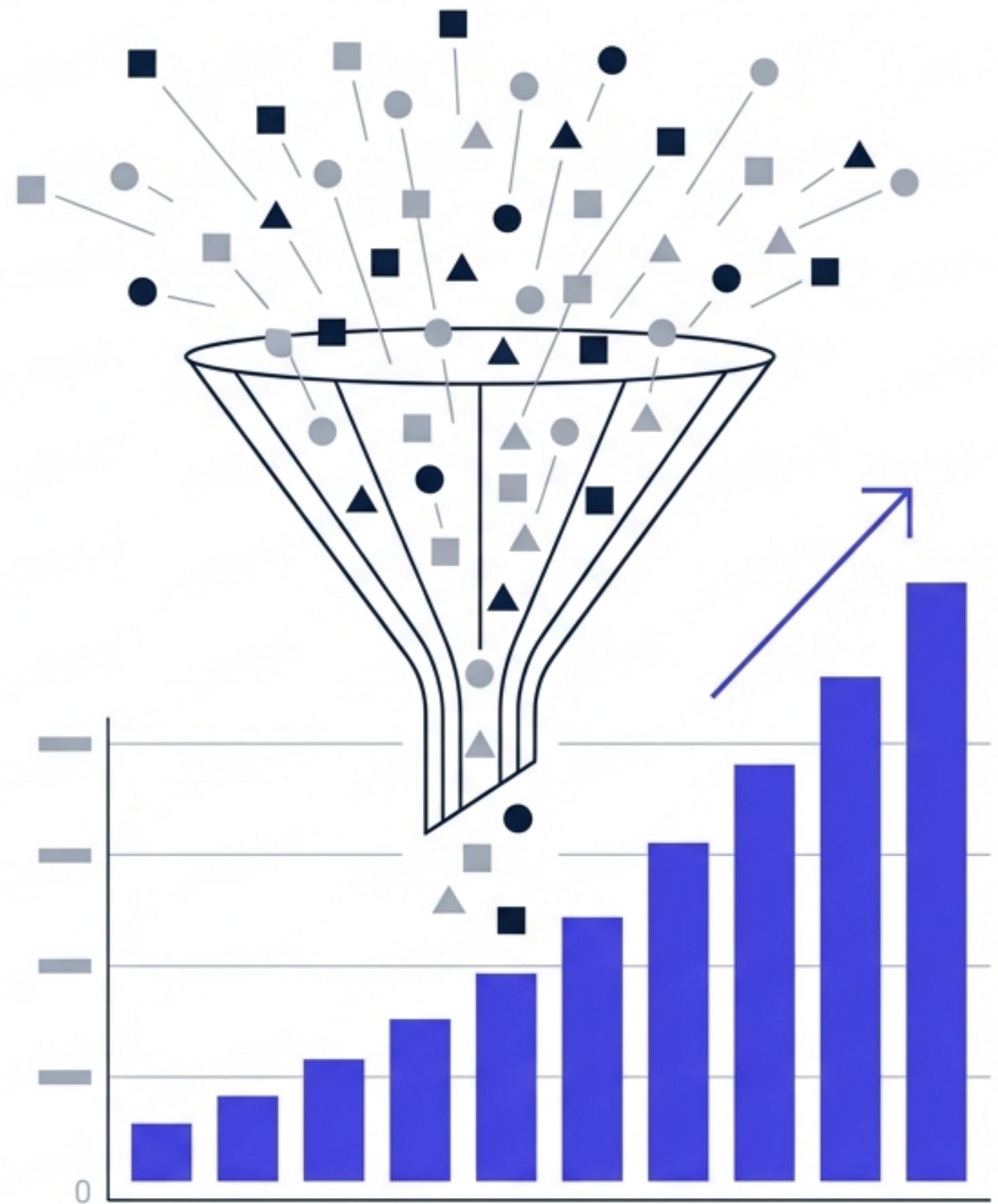


Unlocking Revenue Opportunities Through Transactional Data Insights

A comprehensive analysis of 3,900 customer touchpoints to optimize segmentation, product positioning, and logistics strategy.

CUSTOMER SHOPPING BEHAVIOR ANALYSIS | PORTFOLIO CASE STUDY



The Landscape: Profiling 3,900 Unique Retail Transactions.

Total Volume

3,900 Transactions

Key Dimensions

Age, Gender, Location

Top Location

Montana

	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status	Shipping Type	Payment Method
count	3900.000000	3900.000000	3900	3900	3900	3900.000000	3900	3900	3900	3900	3863.000000	3900	3900	3900
unique	Nan	Nan	2	25	4	Nan	50	4	25	4	Nan	2	6	6
top	Nan	Nan	Male	Blouse	Clothing	Nan	Montana	M	Olive	Spring	Nan	No	Free Shipping	No
freq	Nan	Nan	2652	171	1737	Nan	96	1755	177	999	Nan	2847	675	22
mean	1950.500000	44.068462	Nan	Nan	Nan	59.764359	Nan	Nan	Nan	Nan	3.750065	Nan	Nan	Nan
std	1125.977333	15.207589	Nan	Nan	Nan	23.688392	Nan	Nan	Nan	Nan	0.716983	Nan	Nan	Nan
min	1.000000	18.000000	Nan	Nan	Nan	20.000000	Nan	Nan	Nan	Nan	2.500000	Nan	Nan	Nan
25%	975.750000	31.000000	Nan	Nan	Nan	39.000000	Nan	Nan	Nan	Nan	3.100000	Nan	Nan	Nan
50%	1950.500000	44.000000	Nan	Nan	Nan	60.000000	Nan	Nan	Nan	Nan	3.800000	Nan	Nan	Nan
75%	2925.250000	57.000000	Nan	Nan	Nan	81.000000	Nan	Nan	Nan	Nan	4.400000	Nan	Nan	Nan
max	3900.000000	70.000000	Nan	Nan	Nan	100.000000	Nan	Nan	Nan	Nan	5.000000	Nan	Nan	Nan

Transactions range from \$20 to \$100, with a mean of ~\$60.

This dataset captures a complete retail ecosystem, tracking customer activity across 18 distinct variables from discovery to delivery.

From Raw Input to Analytical Assets: The Data Integrity Pipeline.



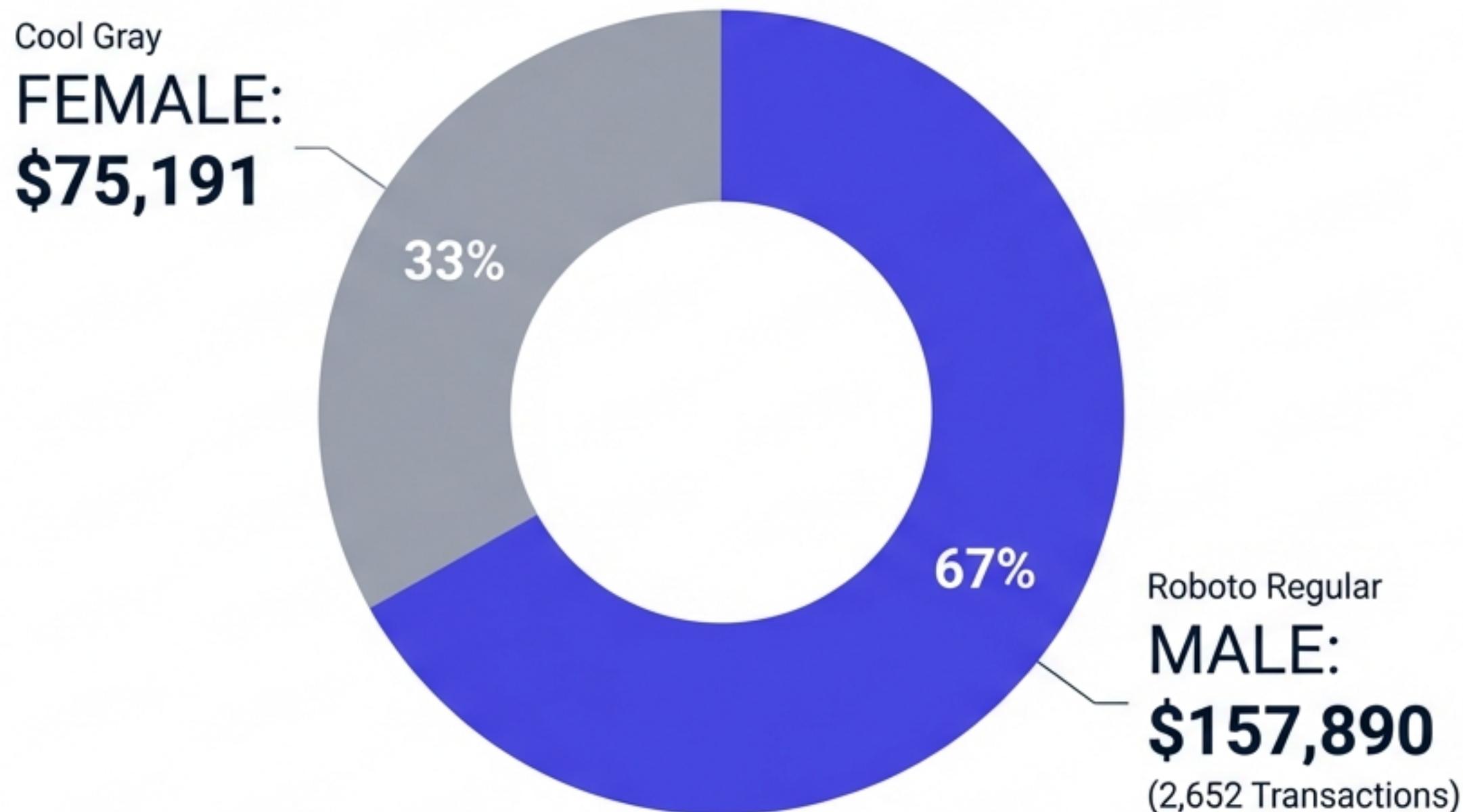
- Imputed 37 missing "Review Ratings" using category medians.
- Standardized columns to snake_case.

- Loaded cleaned DataFrame into PostgreSQL.

- Interactive dashboard for real-time monitoring.

Rigorous data preparation ensured zero data loss during the cleaning phase, specifically regarding the 'Review Rating' imputation, creating a reliable foundation for the SQL analysis that follows.

Male Customers Generate More Than 2x the Revenue of Female Shoppers

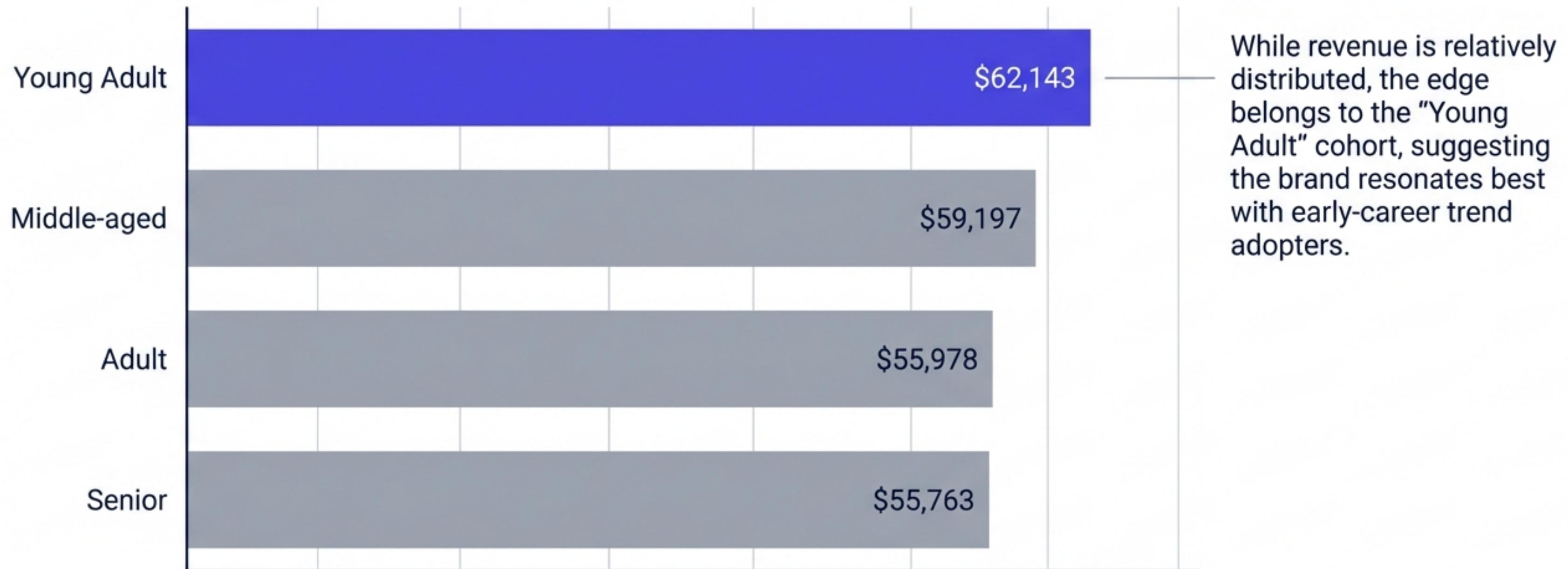


Strategic Implication

The current product mix or marketing funnel is heavily skewed toward male demographics.

growth relies on either doubling down on this "Cash Cow" segment or investigating the friction points preventing female conversion.

Young Adults Lead Spending, Signaling a Trend-Driven Market



High Sales Volume Does Not Correlate with Maximum Customer Satisfaction

VOLUME LEADERS (Total Orders)

Blouse - 171 Orders

Pants - 171 Orders

Shirt - 169 Orders

QUALITY LEADERS (Avg. Rating)

Gloves - 3.86/5.0

Sandals - 3.84/5.0

Boots - 3.82/5.0

Insight: Clothing items drive volume but Accessories drive satisfaction. Opportunity exists to cross-sell high-satisfaction accessories to high-volume clothing buyers.

Express Shipping Users Show Lower Price Sensitivity & Higher Basket Value.

\$60.48 

Express Shipping
Avg. Spend

\$58.46 

Standard Shipping
Avg. Spend

Heavily Discounted Items

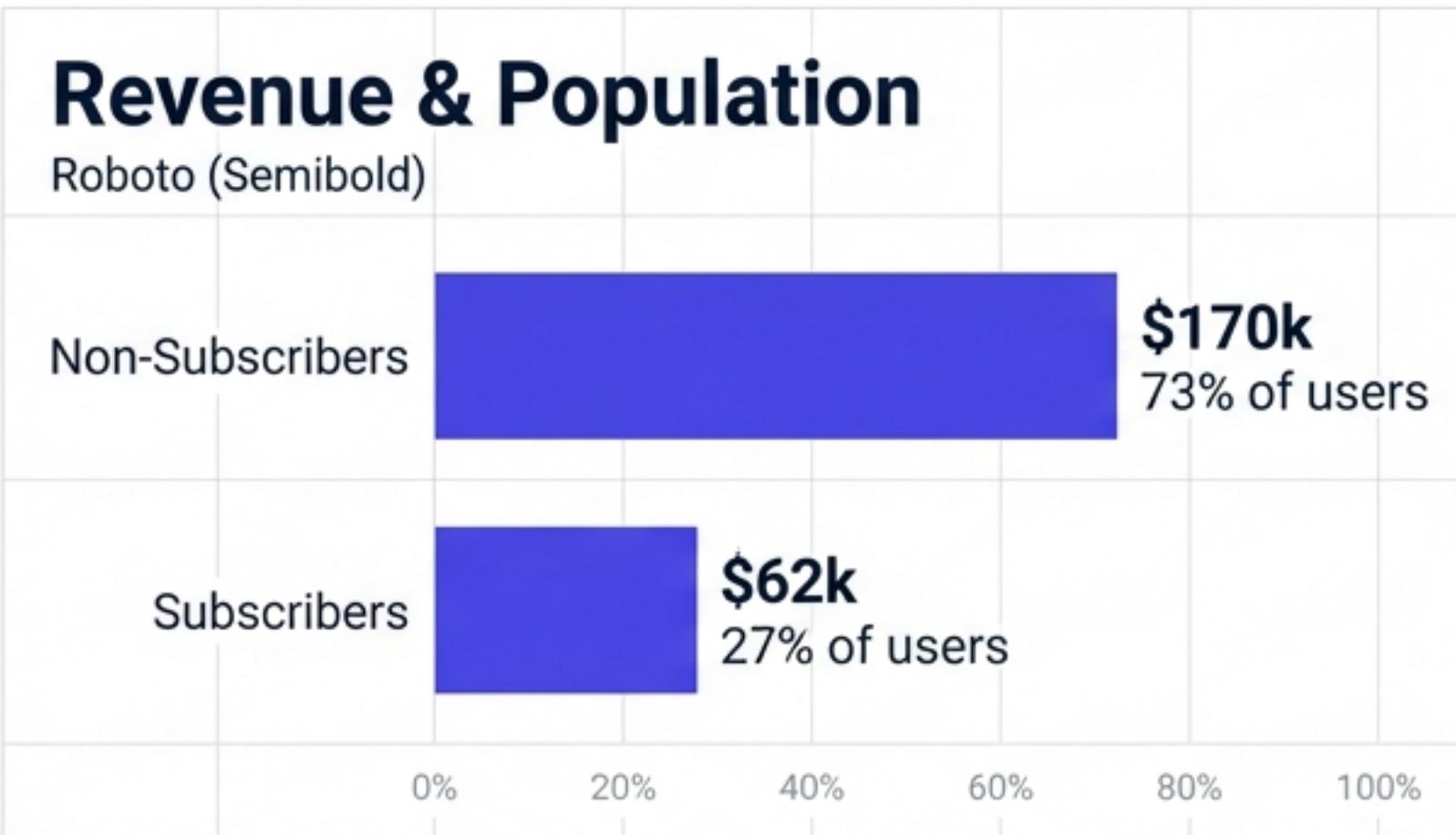
Hat - **50.00% Discount Rate**

Sneakers - **49.66% Discount Rate**

Coat - **49.07% Discount Rate**

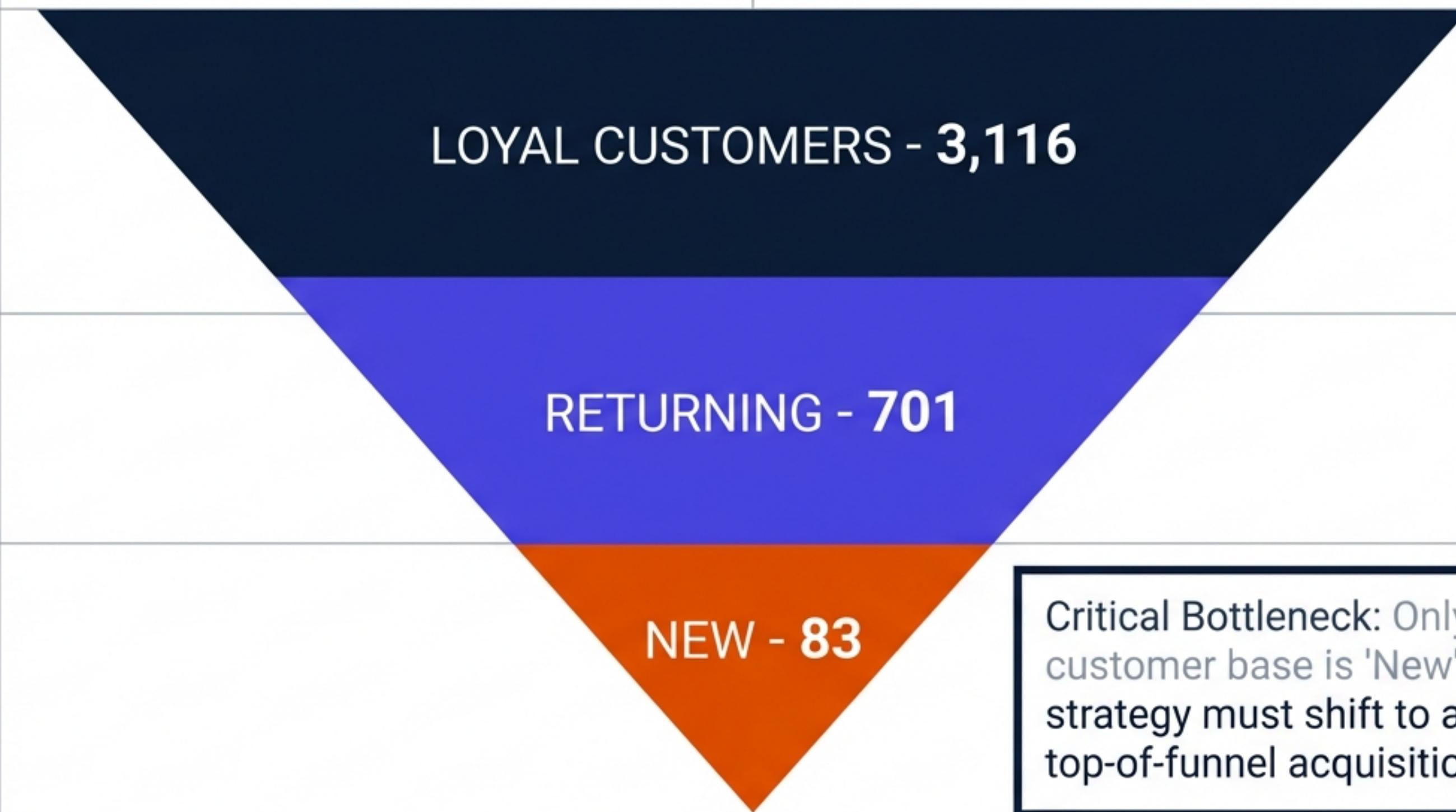
Customers selecting 'Express' shipping spend ~3.5% more per transaction. Conversely, accessories like Hats and Sneakers rely heavily on price cuts to generate volume.

Non-Subscribers Drive Volume, but Subscribers Offer Consistency



Since average spend is identical (~\$59), the value of a subscription is purely retention. The growth lever lies in converting the high volume of non-subscribers into the recurring revenue model.

Retention is Strong, but the “New Customer” Funnel Requires Immediate Attention



The Executive Dashboard: A Real-Time Pulse on Business Health.

Customer Behavior Dashboard

Subscription Status

No	Yes
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Gender

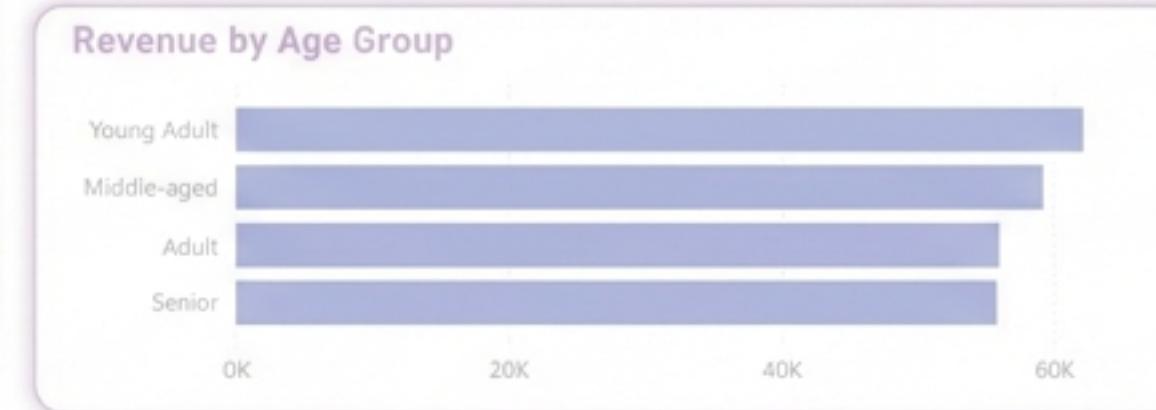
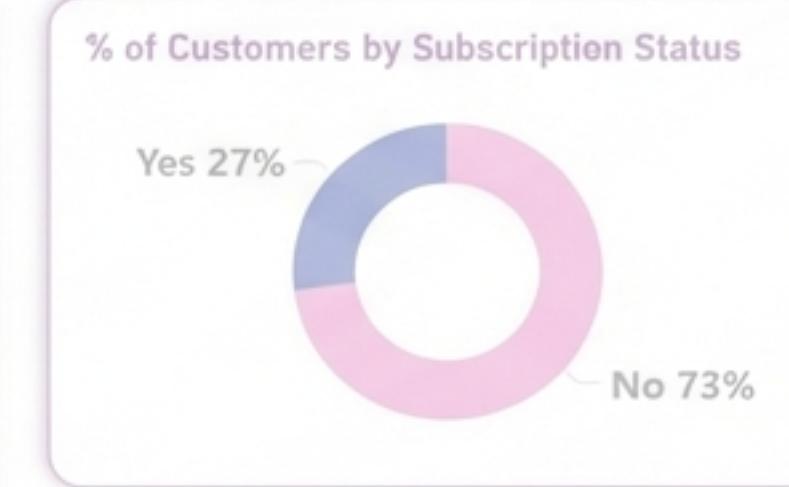
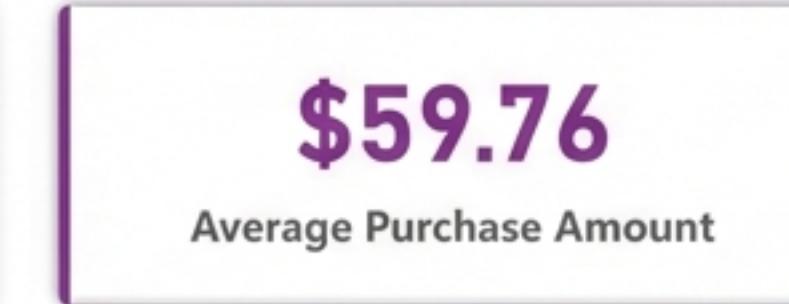
Female	Male
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Category

Accessories
Clething
Foetwear
Outerwear

Shipping Type

<input type="radio"/> 2-Day Shipping
<input type="radio"/> Express
<input type="radio"/> Free Shipping
<input type="radio"/> Next Day Air
<input type="radio"/> Standard
<input type="radio"/> Store Pickup



This interactive tool integrates SQL outputs to track average order value, category performance, and demographic shifts dynamically.

Strategic Recommendations: Turning Insights into ROI.



ACQUISITION

Target "Young Adult Males" with marketing campaigns featuring high-rated items (Gloves/Boots) to fix the low "New Customer" count (83).



RETENTION

Convert the "Returning" segment (701 users) to "Loyal" by offering exclusive subscriber benefits.



OPERATIONS

Promote "Express Shipping" at checkout. Data shows these users spend ~\$2.00 more per transaction.



PRICING

Re-evaluate the 50% discount rate on Hats. High sales volume implies demand exists; test reducing discounts to recover margin.

Data-Driven Decision Making.

This analysis demonstrates the end-to-end capability of transforming raw transactional logs into strategic business intelligence using Python, SQL, and Power BI.

