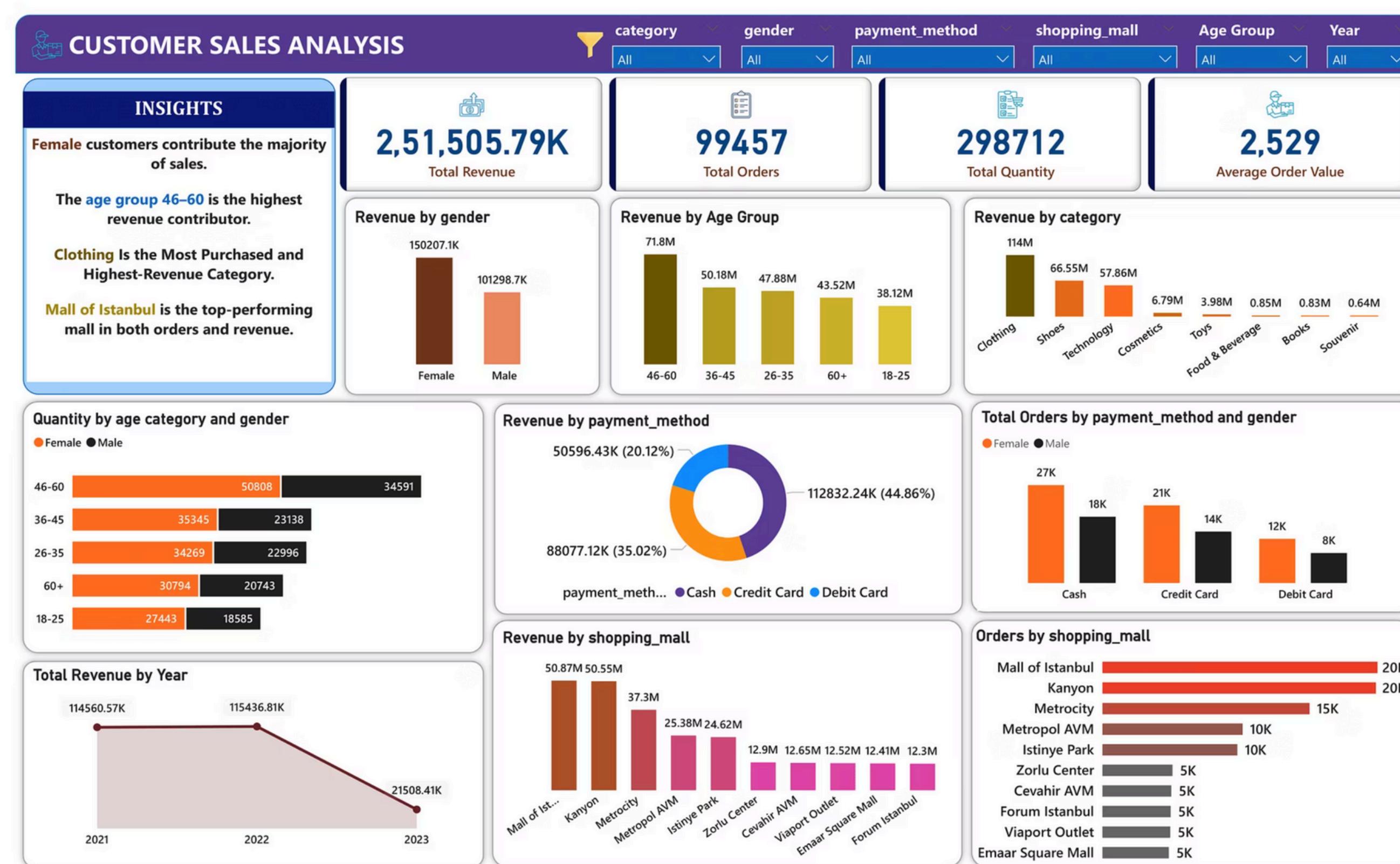


CUSTOMER DATA ANALYSIS



Unlocking strategic growth through data-driven insights. This analysis delves into e-commerce performance, leveraging business intelligence to understand customer behavior and optimize sales strategies.

Customer Sales Analysis Dashboard



Project Overview

Scope & Scale

This comprehensive e-commerce analysis examined **99,457 customer transactions** across 10 key data attributes. Using MySQL for data extraction and Power BI for visualization, we transformed raw transaction data into actionable business intelligence.

- Domain: E-Commerce
- Tools Used: MySQL & Power BI
- Dataset Size: 99,457 rows and 10 attributes

Core Objective

Identify sales patterns, customer purchasing behaviors, and revenue drivers to inform strategic decisions and optimize business performance across product categories and store locations.



Dataset Architecture

invoice_no: A combination of the letter 'I' and a 6-digit integer uniquely assigned to each operation.

customer_id: A combination of the letter 'C' and a 6-digit integer uniquely assigned to each operation.

gender: String variable of the customer's gender.

age: Positive Integer variable of the customers age.

category: String variable of the category of the purchased product.

quantity: The quantities of each product (item) per transaction.

price: Product price per unit in Turkish Liras (TL).

payment_method: String variable of the payment method (cash, credit card or debit card) used for the transaction.

invoice_date: The day when a transaction was generated.

shopping_mall: String variable of the name of the shopping mall where the transaction was made.

Key Performance Indicators



1

Total Revenue

Aggregate income generated from all customer transactions during the analysis period

2

Total Orders

Count of unique purchase transactions recorded across all channels

3

Total Quantity Sold

Sum of all individual items sold across every transaction

4

Average Order Value

Mean revenue generated per customer order, indicating spending patterns

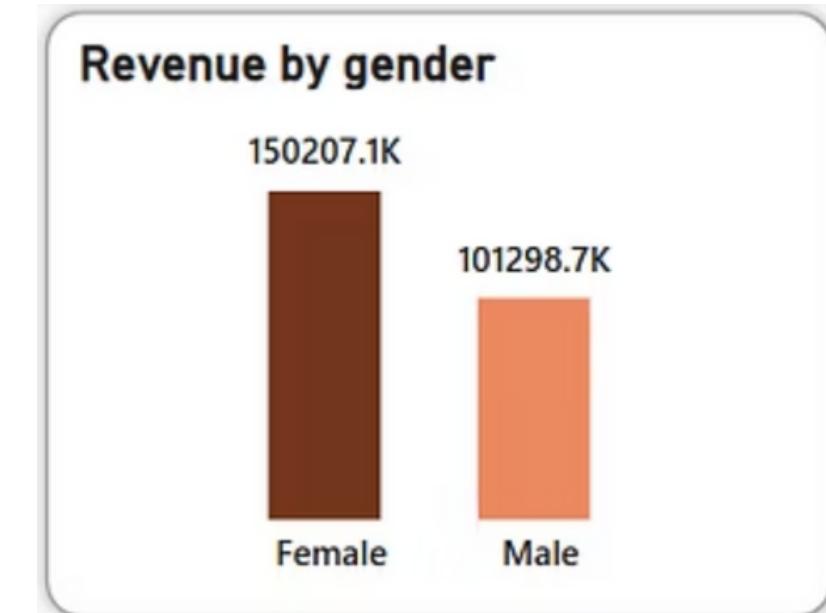
Customer Insights

Demographics Drive Revenue

Customer segmentation analysis reveals significant patterns in purchasing behavior across gender and age groups.

Female customers lead in revenue

Women generate higher total revenue and purchase more items per transaction on average

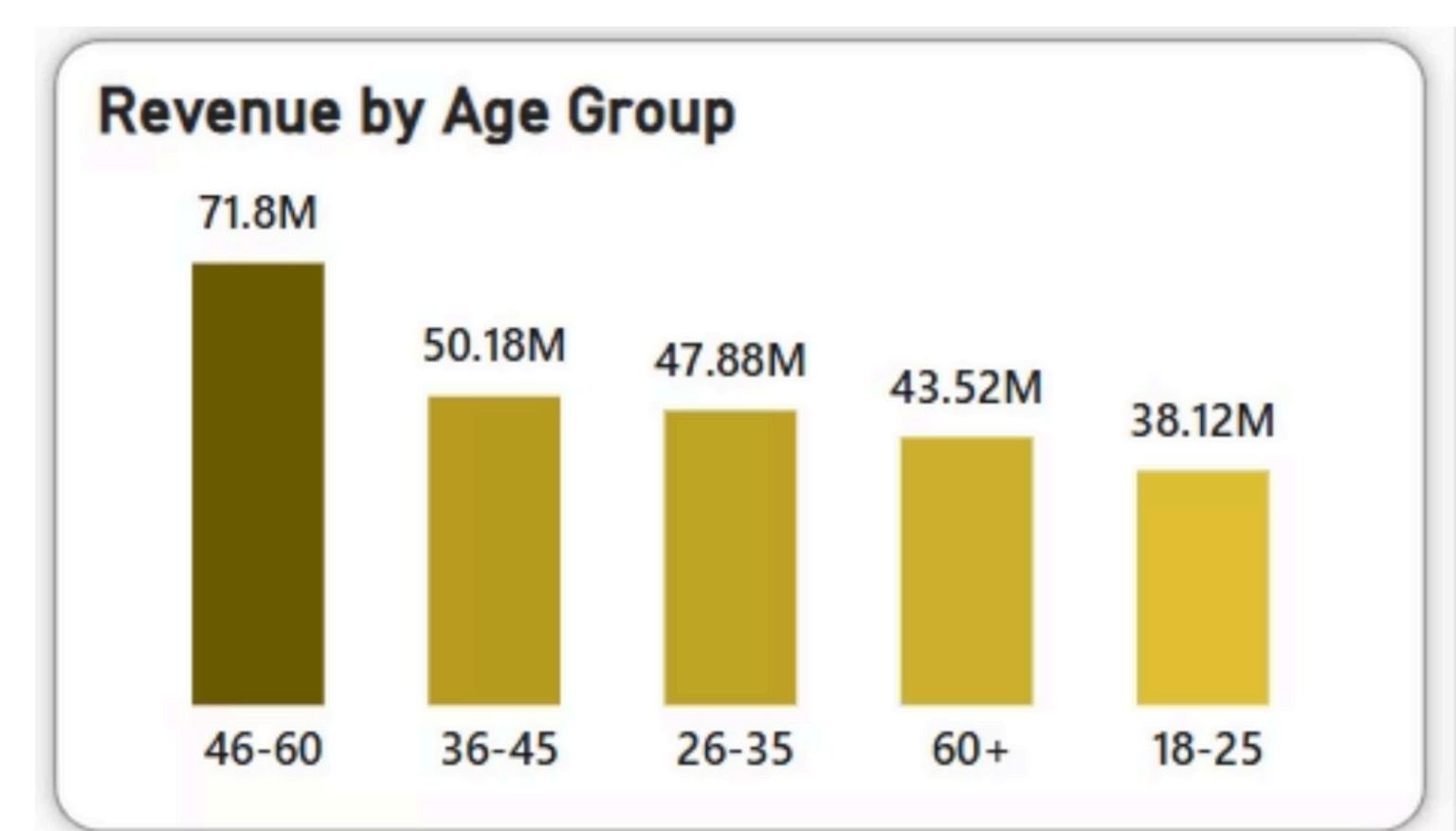


Age group 46–60 dominates spending

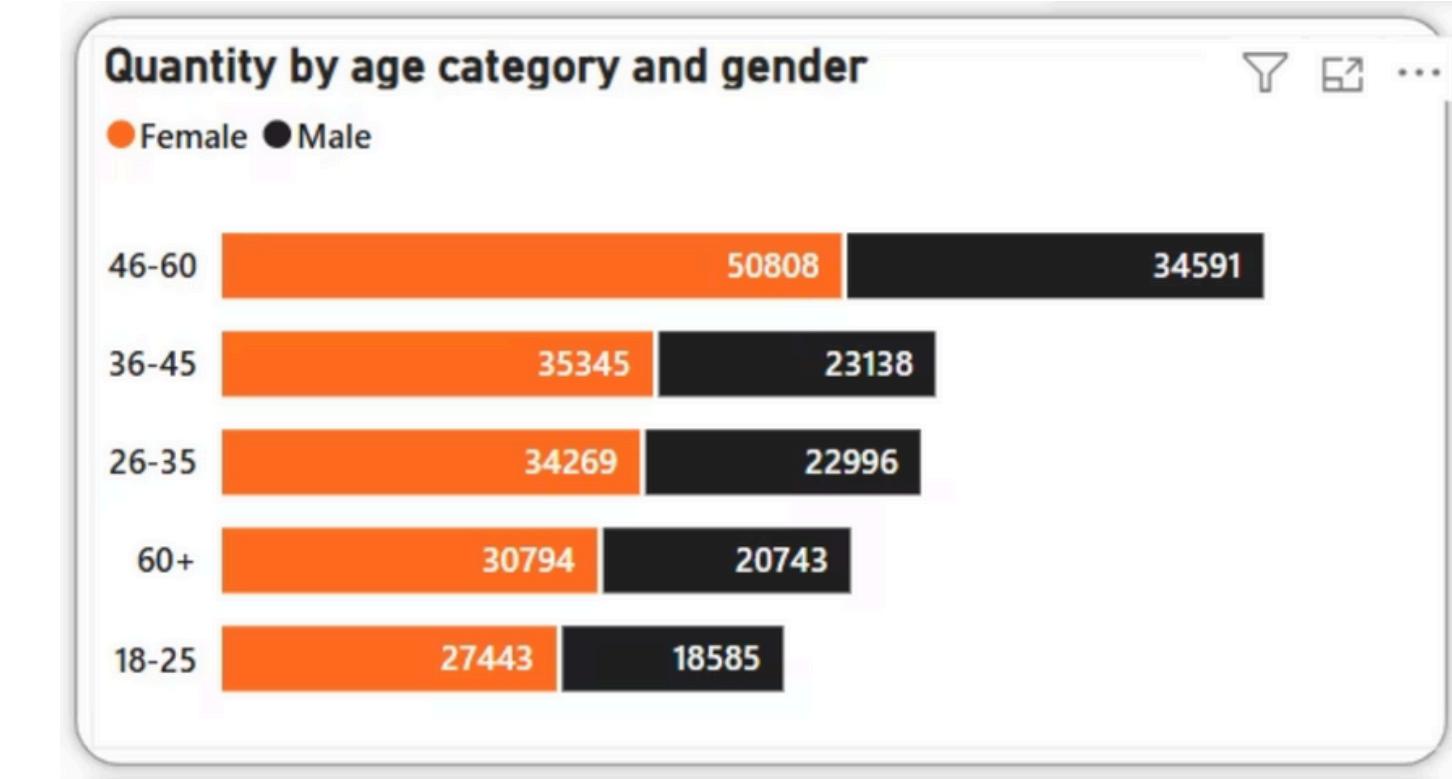
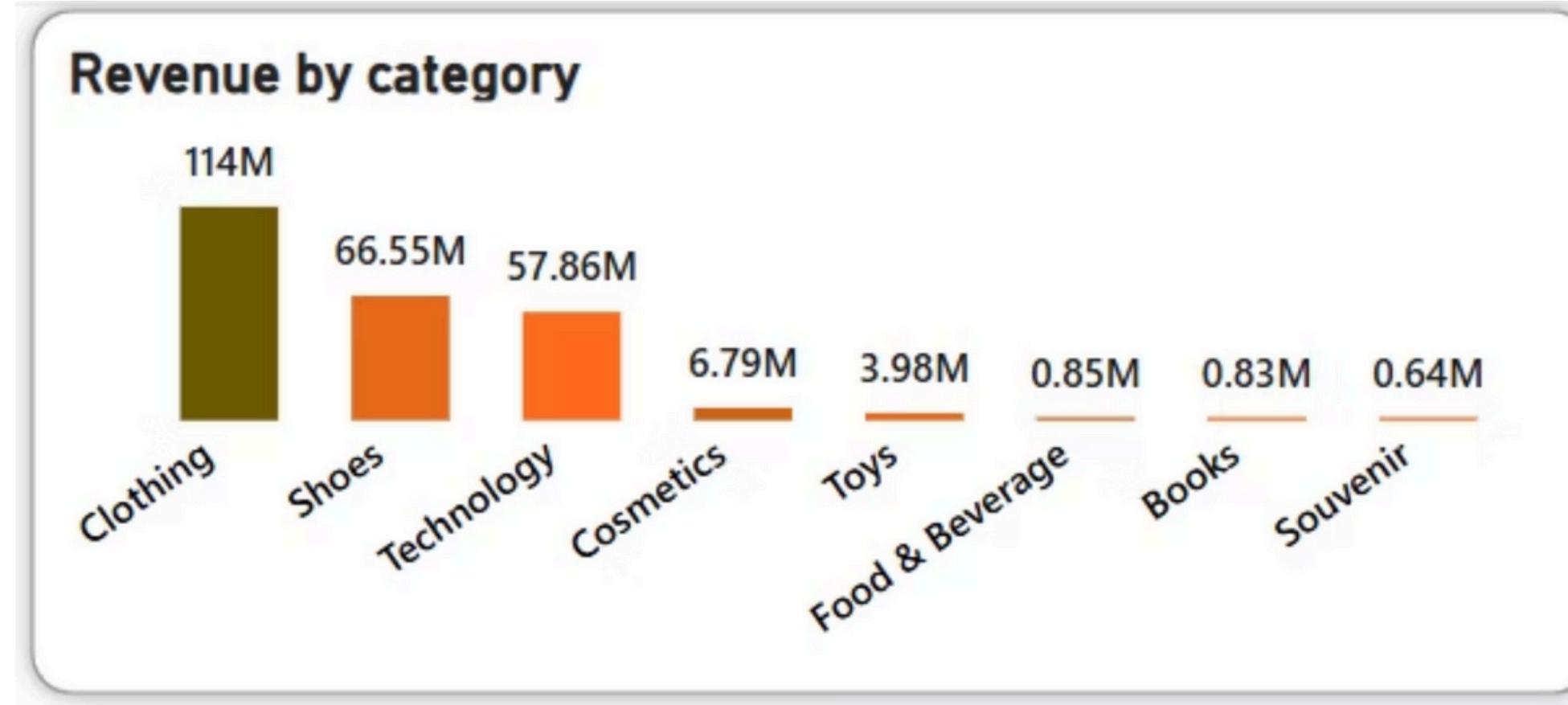
This demographic contributes the highest revenue share, representing peak earning and spending years

Younger and older segments lag

Ages 18–25 and 60+ show notably lower spending behavior, presenting growth opportunities



Category Insights



Top Performer: Clothing

Clothing dominates revenue generation, representing the strongest product category with consistent high-volume sales

Strong Contributors

Shoes and **Technology** rank as the next best-performing categories, showing healthy demand and growth potential

Underperformers

Books, Souvenirs, Food & Beverage, and Toys demonstrate lower purchase volumes, requiring strategic intervention

Shopping mall Insights

1

Top Performers: Mall of Istanbul & Kanyon

Our leading locations, consistently achieving the highest sales volumes and customer engagement.

2

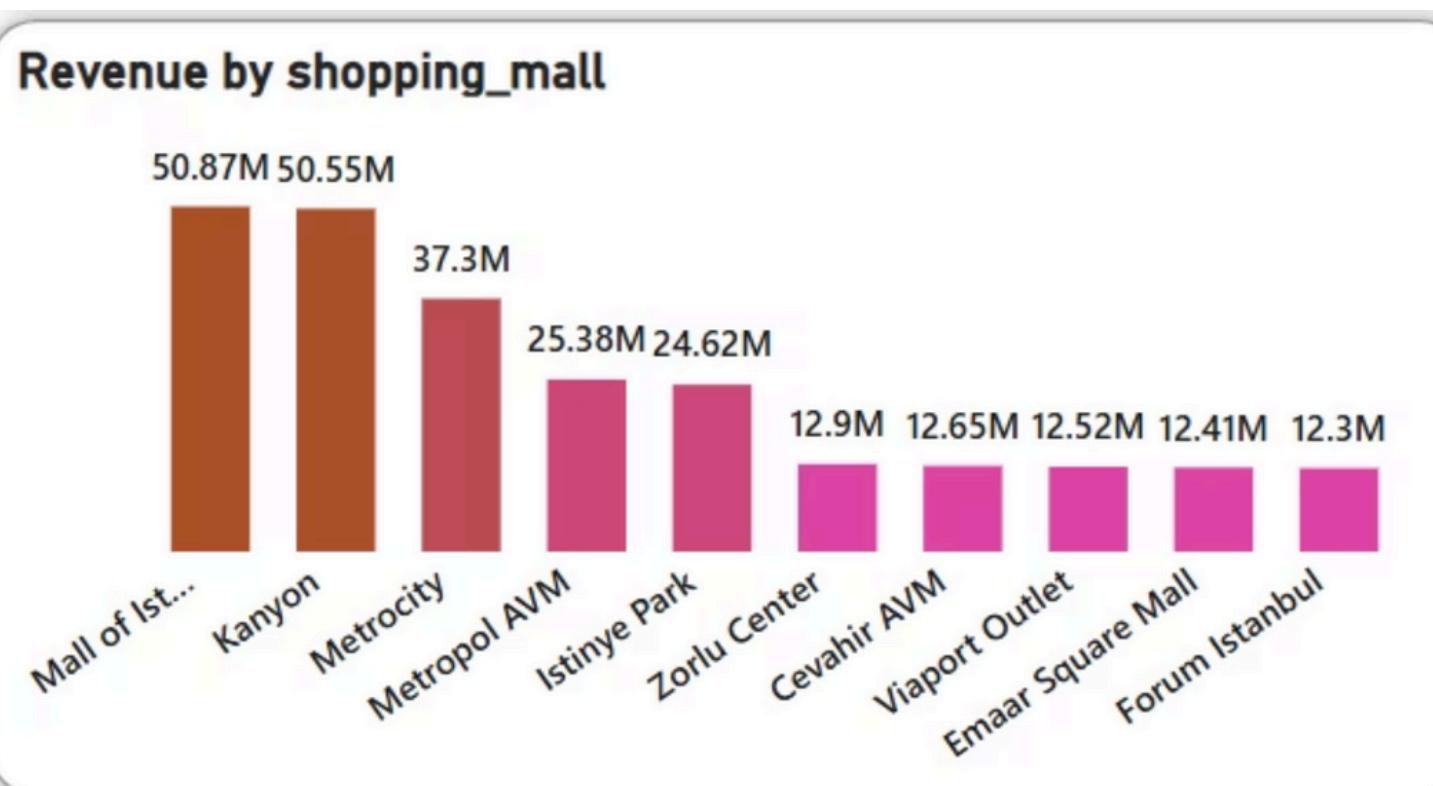
Medium Performers: Metrocity & Metropol AVM

Demonstrating healthy demand and contributing steadily to our regional revenue.

3

Lower Performers: Remaining Malls

Exhibit lower purchase volumes and consistent sales trends, indicating areas that require strategic intervention and targeted improvement.



Payment Method Insights

44.86%

Cash Dominates

Most preferred payment method across all transactions

2nd

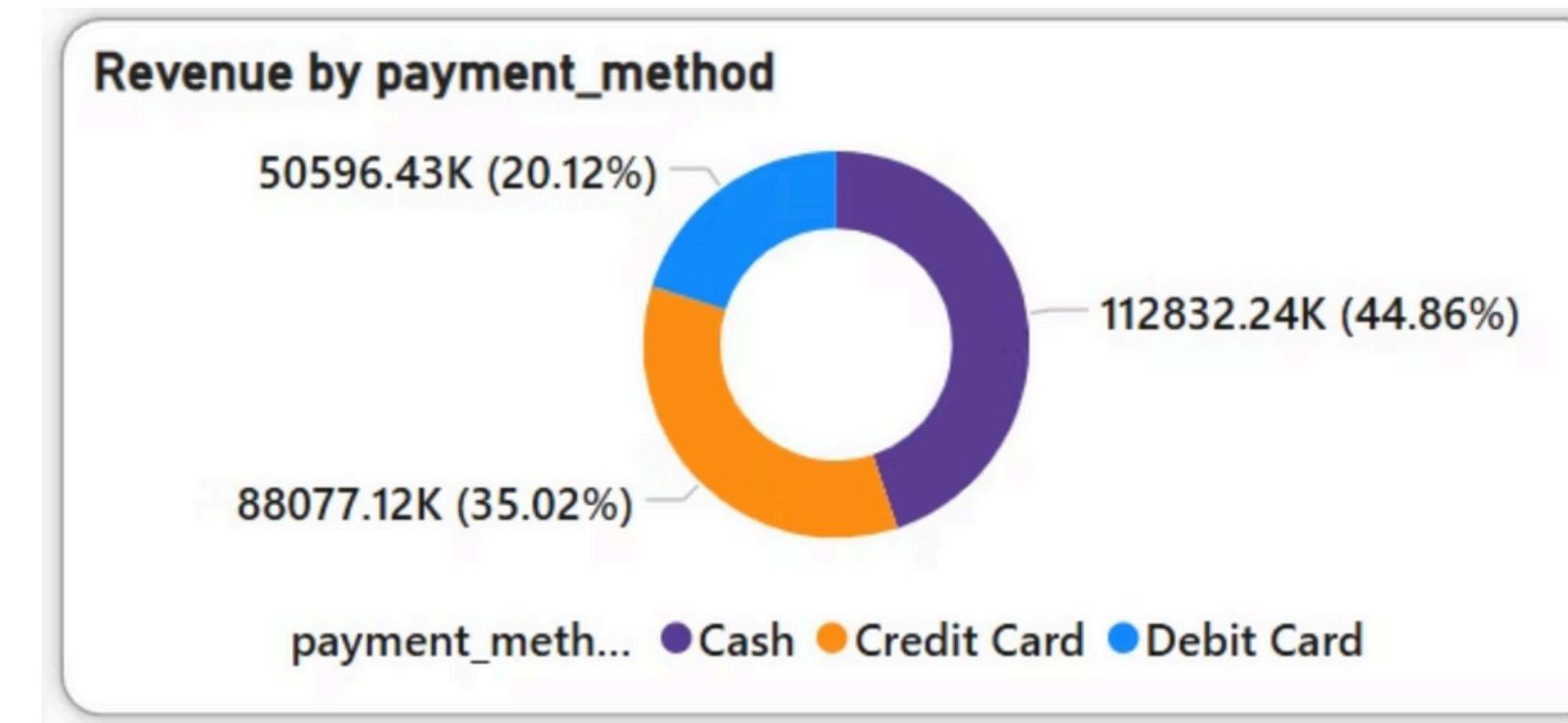
Credit Cards Rising

Second most popular with growing adoption rates

3rd

Debit Card Lags

Contributes the smallest share of payment methods



Despite the digital transformation trend, **cash remains king** in customer transactions. Credit card usage shows promising growth momentum, suggesting an opportunity to incentivize digital payment adoption through loyalty programs and targeted promotions.

Revenue Trends Over Time

1 2021: Stable Performance

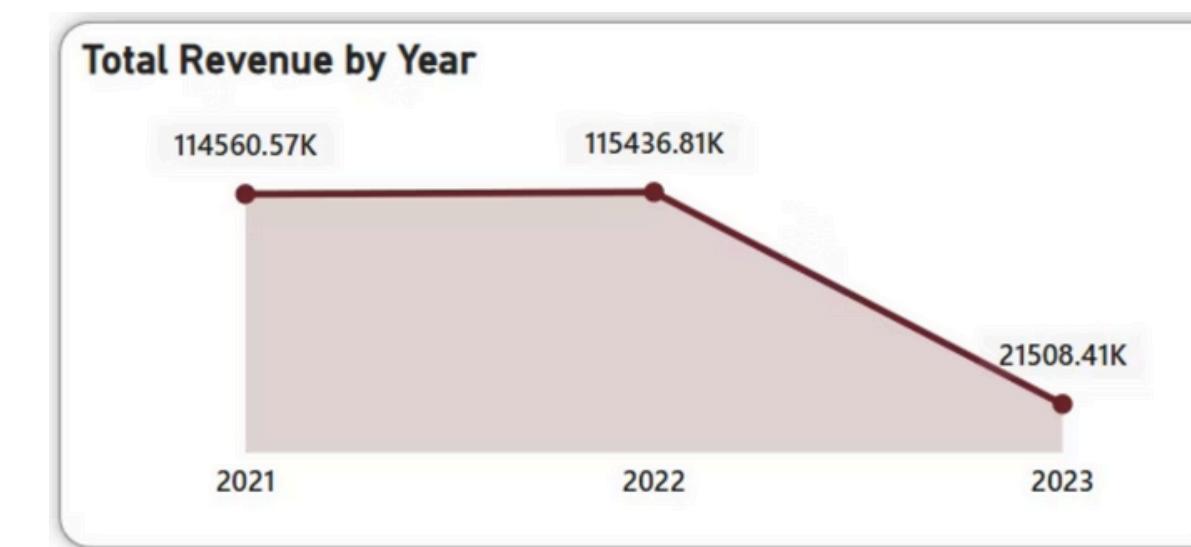
Revenue maintained consistent levels throughout the year with predictable seasonal patterns

2 2022: Continued Stability

Similar performance to 2021, showing business resilience and steady customer engagement

3 2023: Sharp Decline

Critical revenue drop signals urgent need for investigation into market conditions, operational issues, or competitive pressures



- ❑ **Action Required:** The 2023 revenue decline demands immediate analysis to identify root causes—whether market-driven, operational, or competitive—and develop recovery strategies.

Strategic Recommendations & Conclusion

Key Action Items

1 Target High-Value Segments

Focus marketing on age 46–60 and female customers who drive the most revenue

2 Accelerate Digital Payments

Implement incentives to shift customers from cash to credit/debit cards

3 Revitalize Weak Categories

Develop targeted campaigns for Books, Souvenirs, Food & Beverage, and Toys

4 Optimize Store Portfolio

Replicate success factors from top malls; consider restructuring underperformers

5 Investigate 2023 Decline

Conduct deep-dive analysis to understand and reverse the revenue drop

Project Impact

This analysis demonstrates the power of combining **MySQL** and **Power BI** to transform raw transactional data into strategic business intelligence.

By uncovering patterns in customer behavior, product performance, and sales trends, we've provided a **data-driven foundation** for revenue optimization and operational excellence.

