

Customer Data Analysis

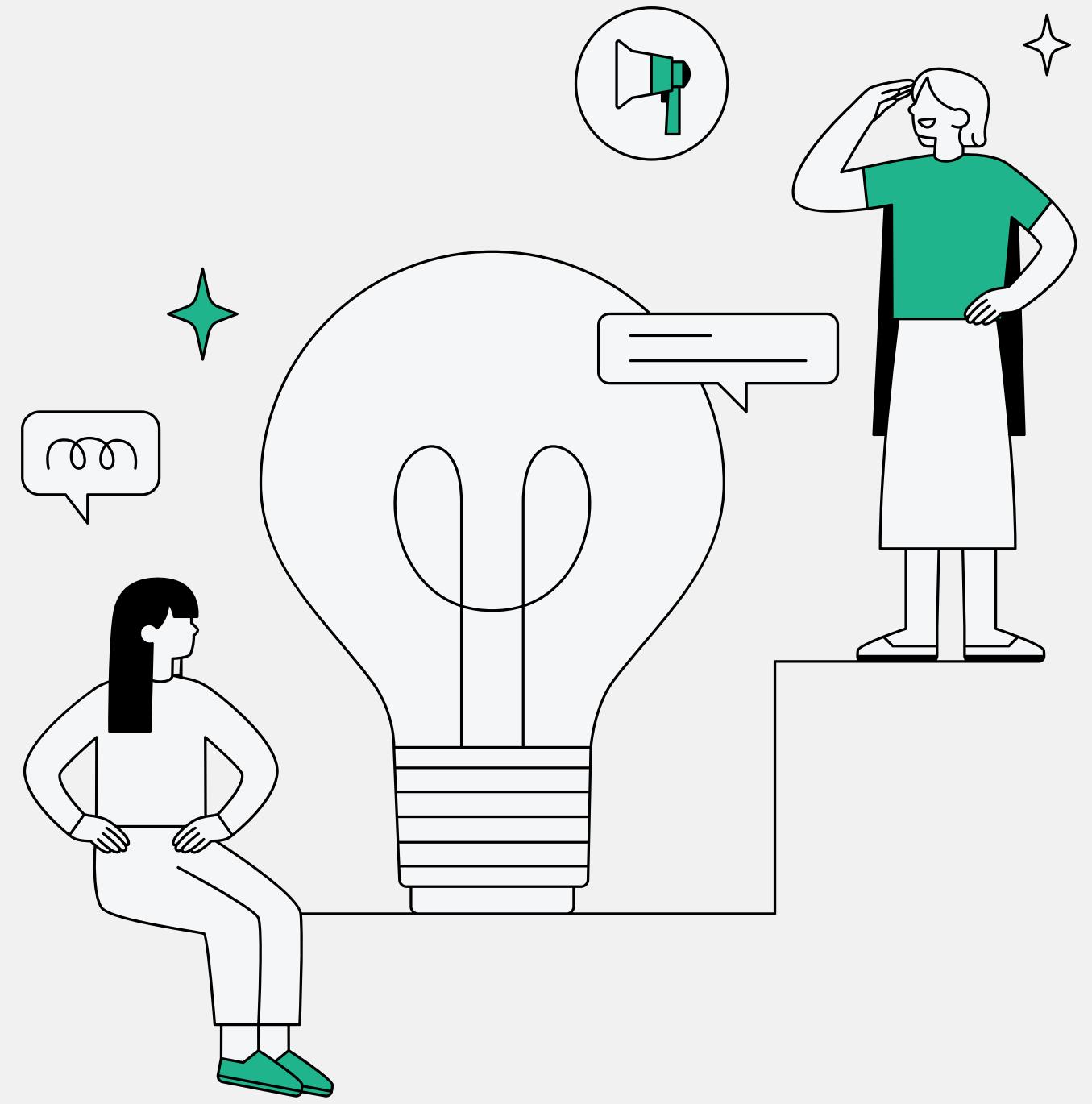
Analyzing 99k+ Transactions to Reveal Data-Driven Opportunities

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Agenda

- Dataset overview
- Project workflow
- Gender Analysis
- Age based analysis
- Payment method insights
- Category wise analysis
- Revenue trend analysis
- Dashboard
- Recommendations



Dataset Overview

99,457

Total Rows

Total transactions analyzed

10

Data Columns

Features per customer
transaction

8

Categories

Unique product categories

10

Shopping Malls

Shopping Malls covered

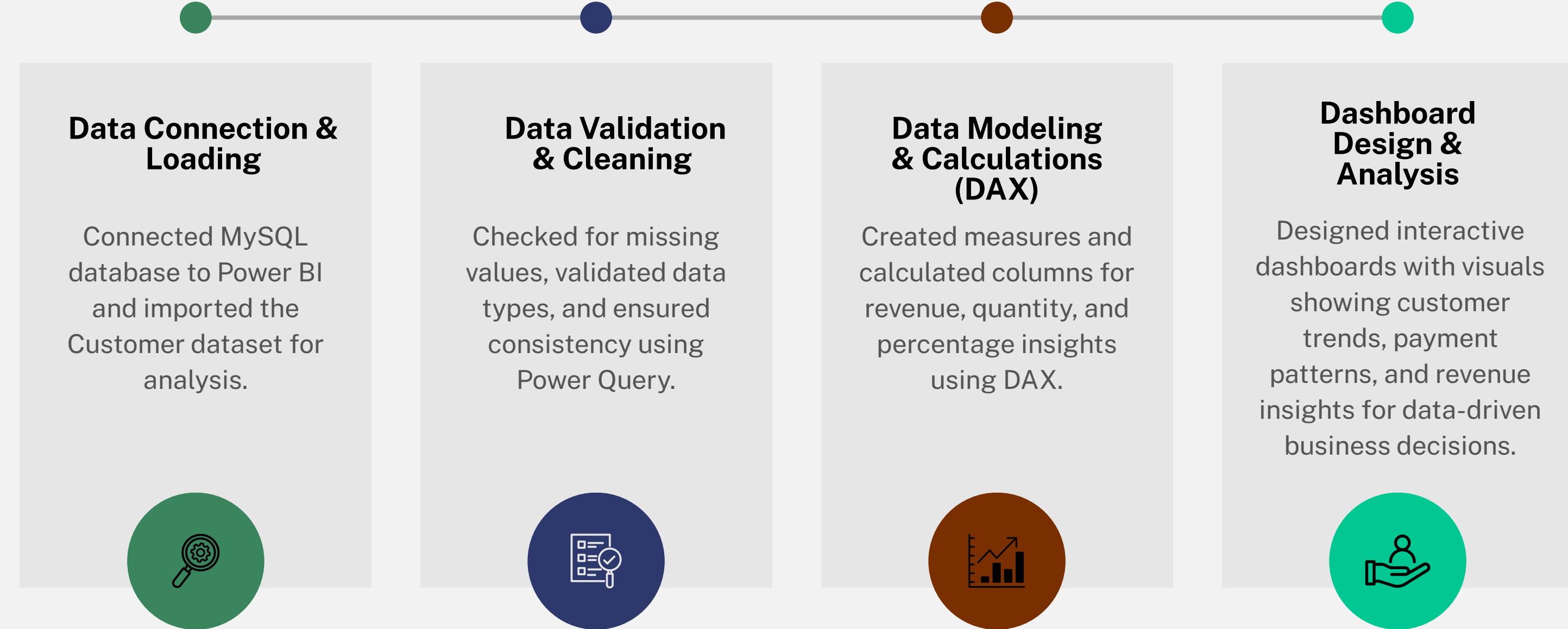
Key Features Tracked

- Customer Information: Customer ID, Age, Gender
- Purchase Details: Quantity, Price, Order Date
- Transaction Info: Invoice Number, Payment Method
- Location & Product Info: Shopping Mall, Product Category

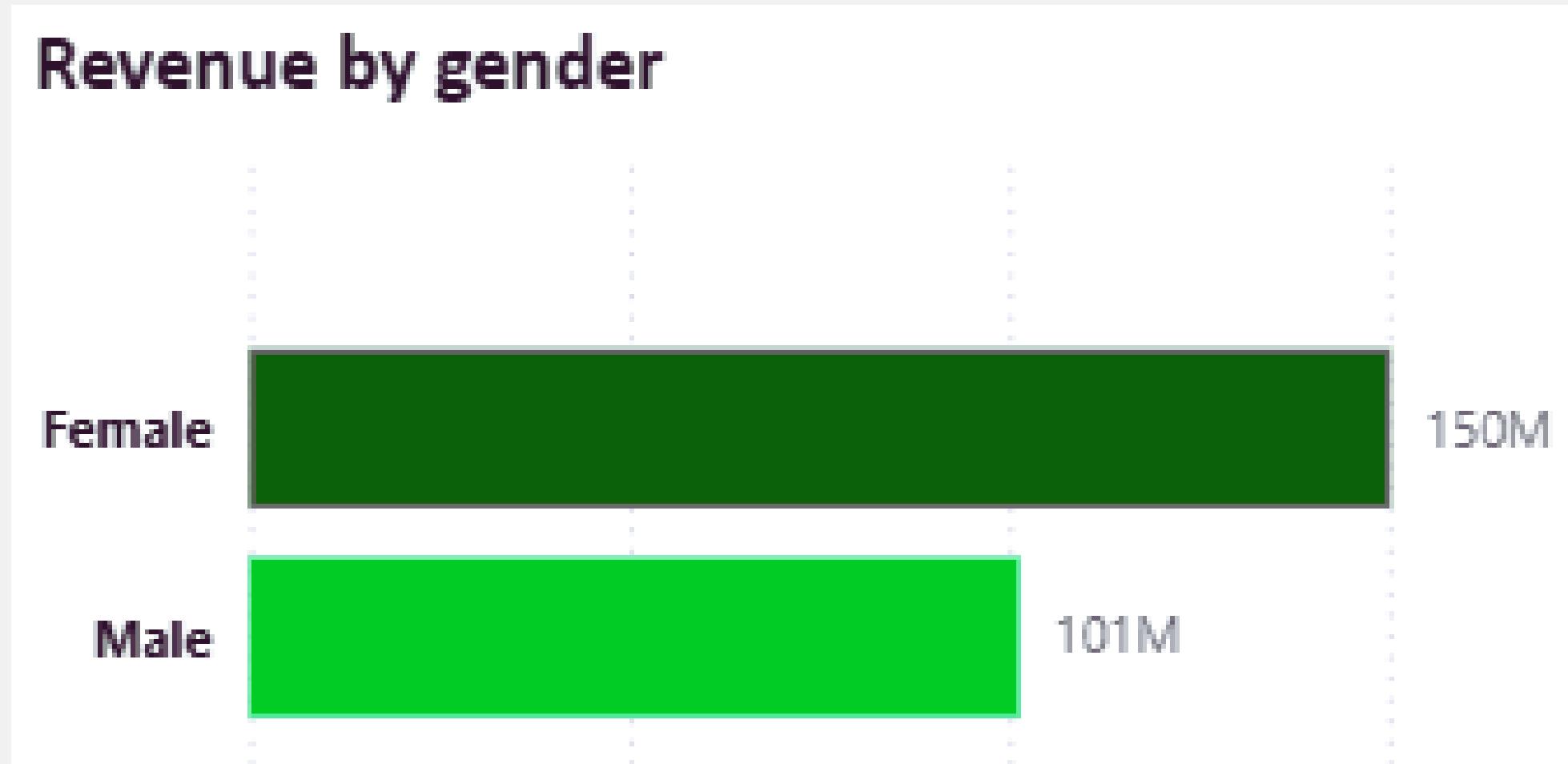
Data Timeline

The data spans a three-year period (2021–2023), covering seasonal and yearly shopping trends across multiple demographics.

Project Workflow Overview



Gender Analysis: Female Dominance Across Key Metrics



- Female customers are the primary revenue driver, contributing 150M in revenue compared to 101M from Males.
- Female customers make up the major share of purchases, buying around 179K (59.8%) items, compared to 120K (40.2%) items bought by male customers.
- For both genders, Cash is the most preferred payment method, with Female Cash payments alone generating the largest single revenue segment at 68M.



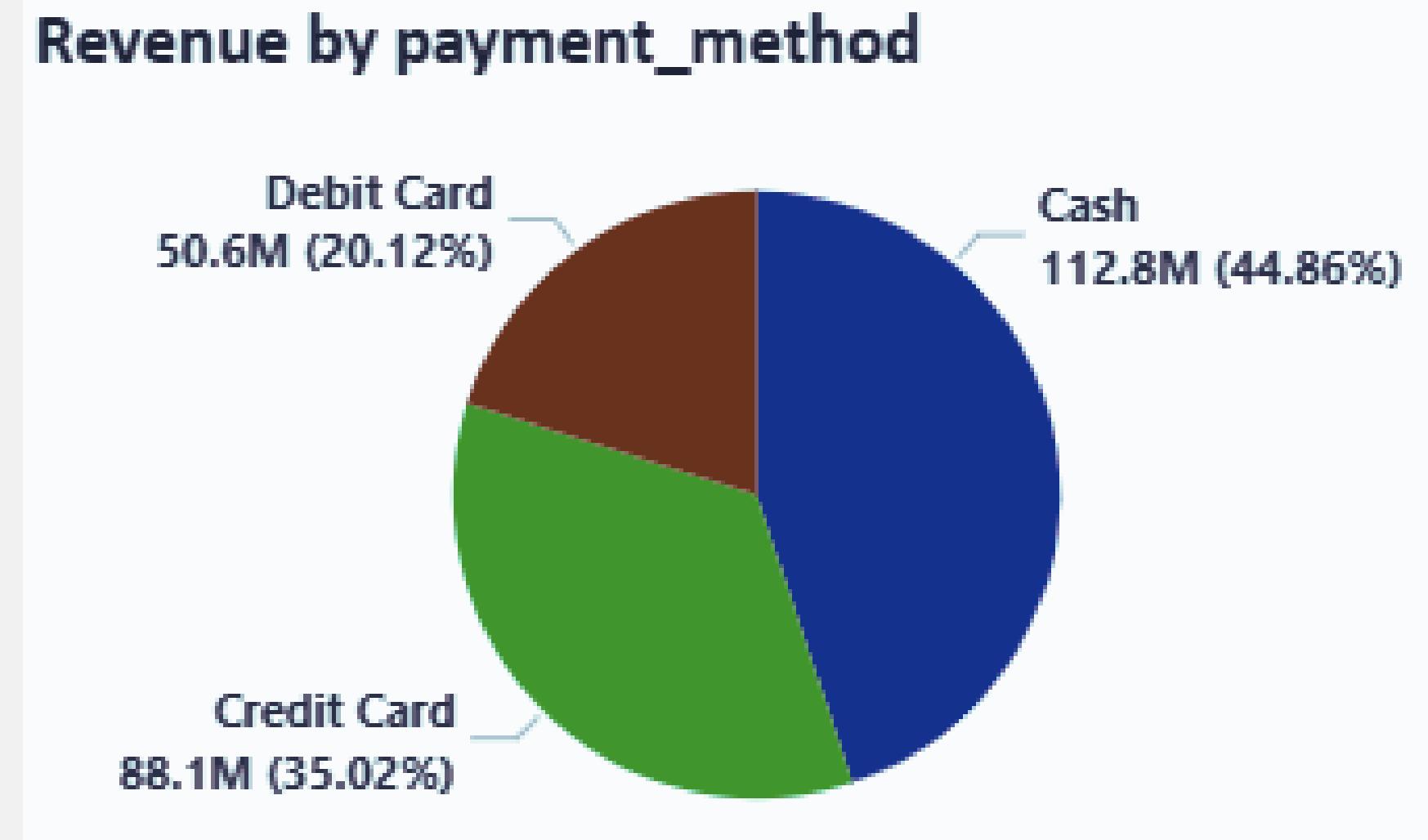
Age-Based Revenue and Volume Insights

Revenue by Age Category



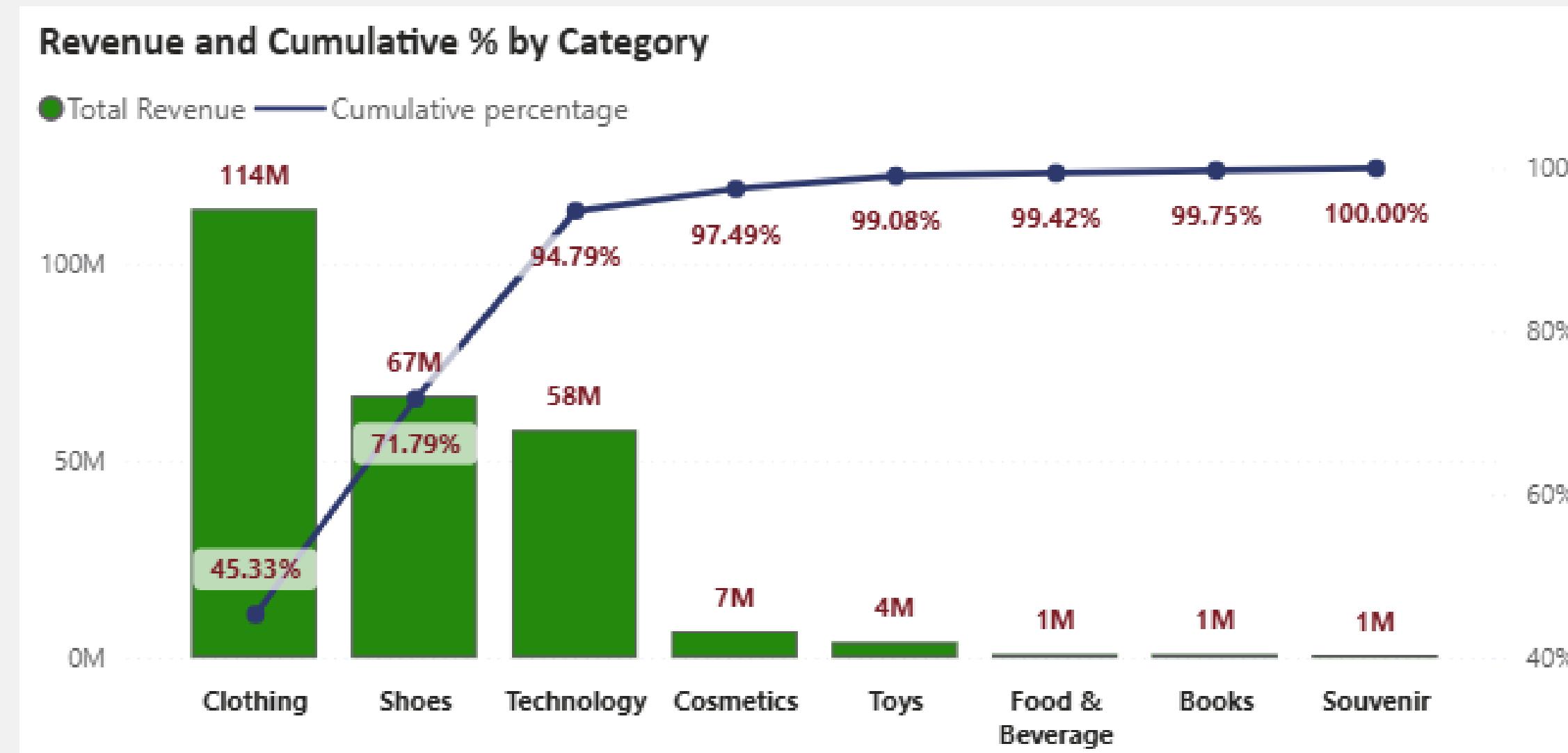
- The 56-69 age category drive the highest sales volume (80K units) and revenue (67M).
- As age increases, shopping volume and revenue also grow, staying steady for ages 26-55 before rising sharply in the 56-69 age group.
- While the 56-69 group leads overall, age 37 is the top single-age performer with 5.58M revenue and 6,217 units, highlighting a group vs. individual performance gap.

Payment Method Insights



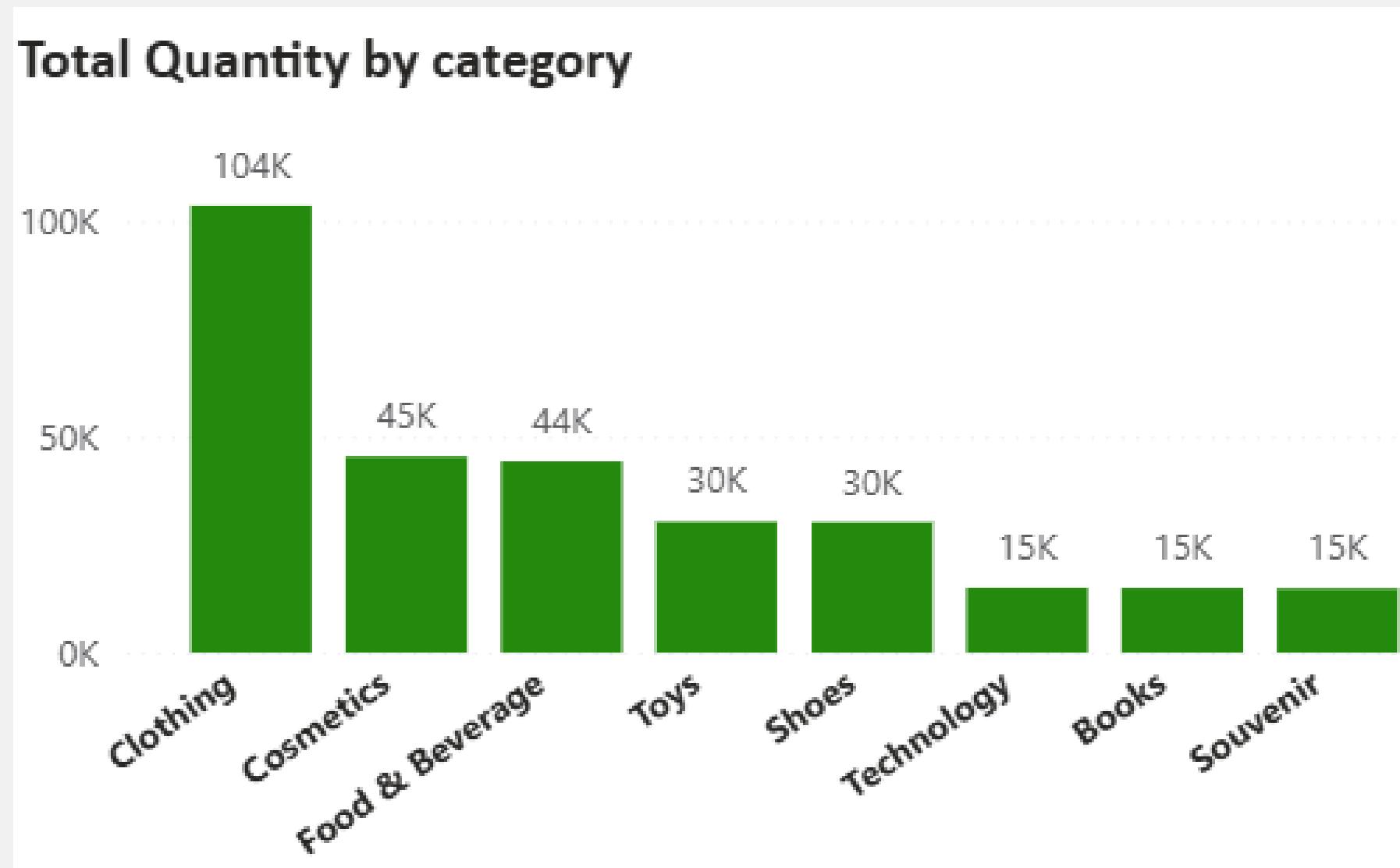
- Cash dominates as the top payment method, accounting for approximately 45% of both total revenue (112.8M) and transaction quantity (44K).
- Credit Card ranks second with 35% of total revenue, while Debit Card is least used at 20%.
- Cash is the primary payment method across all demographics, including both genders, all age groups, and all shopping malls, indicating a universal customer preference rather than a specific segment correlation.

Category wise Analysis



- The top three categories – Clothing (114M), Shoes (67M), and Technology (58M) – generate nearly 95% of total revenue (251.5M).
- Clothing is the single largest category, responsible for over 45% of all revenue.
- The bottom five categories (Cosmetics, Toys, Food & Beverage, Books, and Souvenir) together account for less than 6% of revenue.
- A Pareto Analysis highlights that a small number of categories generate the majority of revenue confirming the 80/20 Rule in this business.

Category wise-Analys: Key Relationships

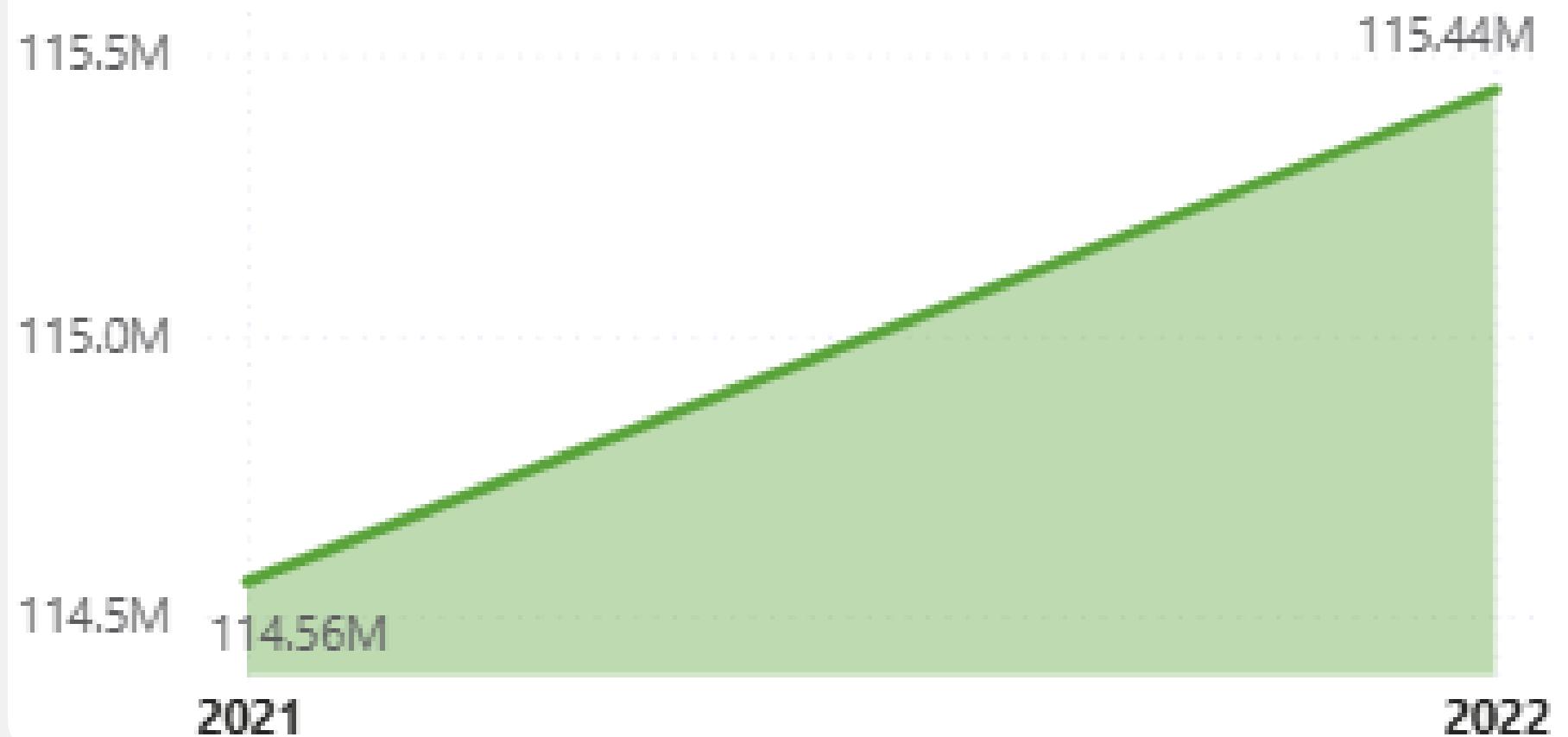


- Vs. Gender (Revenue Driver): Female customers generate higher revenue across all categories, despite identical purchase preferences with males.
- Vs. Age (Value Driver): The 56–69 age group drives the highest sales and revenue in top product lines like Clothing, Shoes, and Technology.
- Vs. Shopping Malls (Location Consistency): Every mall shows the same top-three ranking – Clothing, Shoes, and Technology – proving preferences are location-independent.

► High-value categories like Shoes and Technology earn more from fewer units sold. Cosmetics and Food & Beverage sell higher volumes but generate less revenue. This gap exists due to a higher average selling price (ASP) in premium categories.

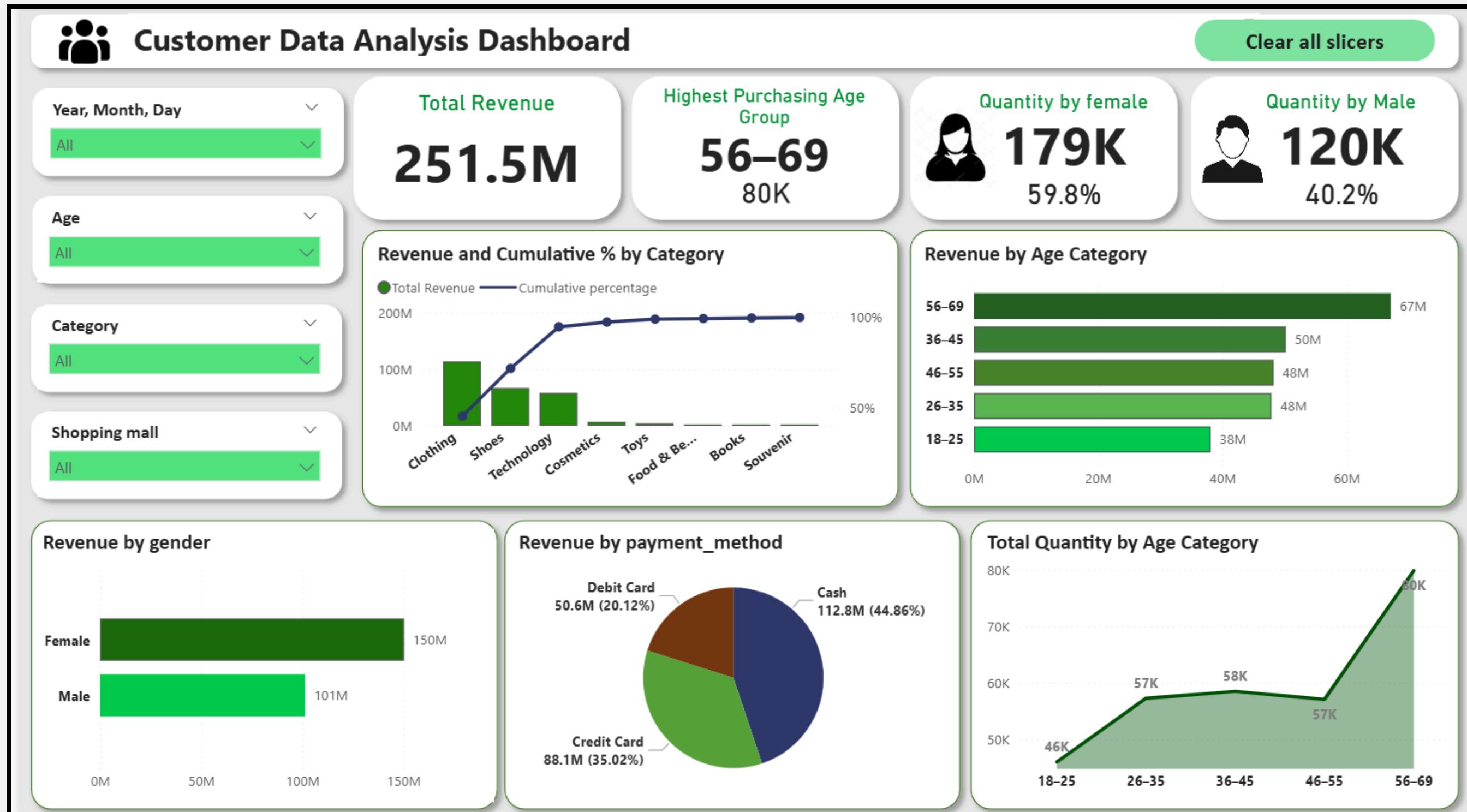
Revenue Trend Analysis

Revenue Trend Analysis (2021–2022)

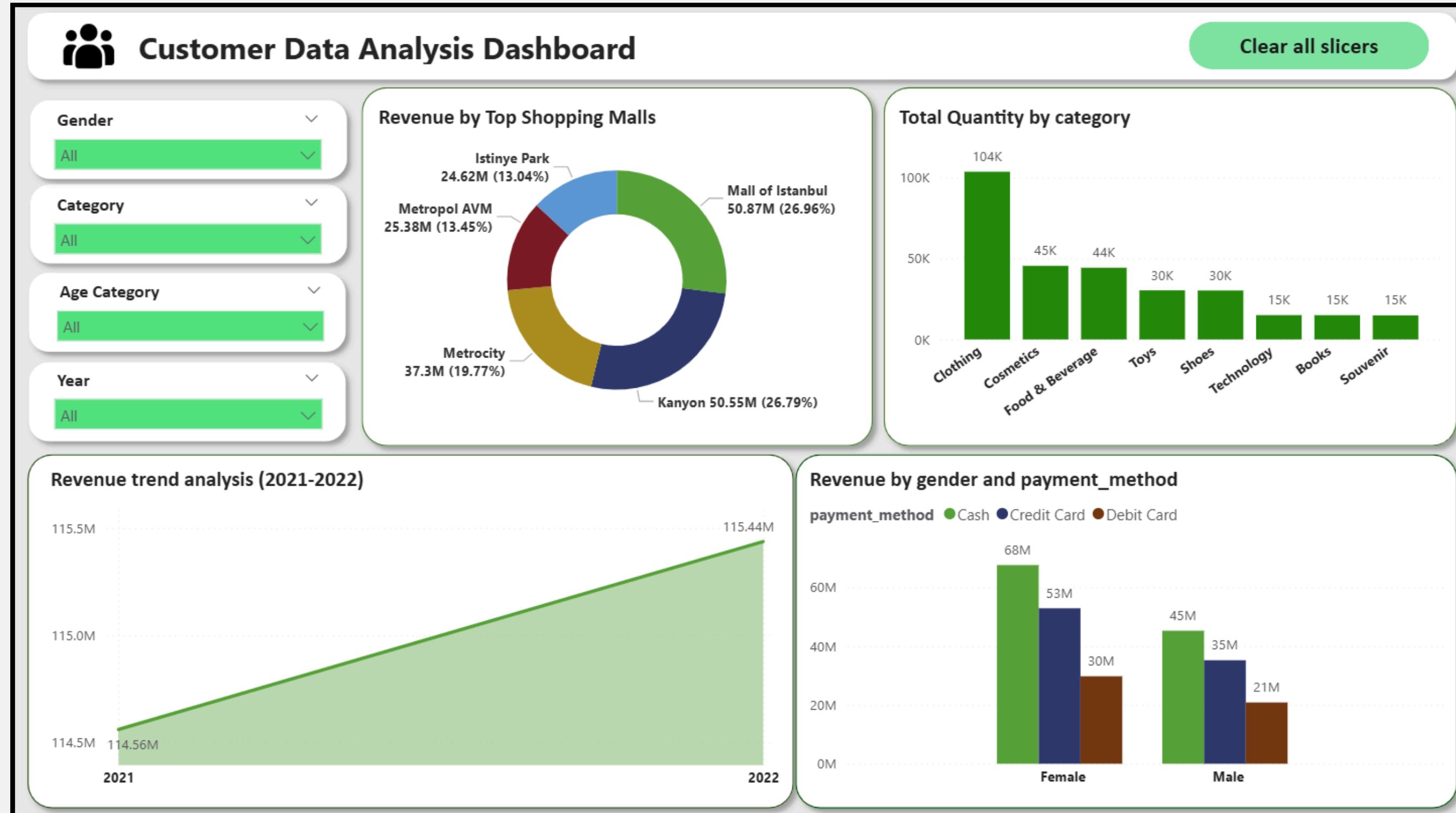


- Revenue shows a stable, consistent upward trend between 2021 and 2022, growing slightly from 114.56 million to 115.44 million.
- Revenue fluctuates across the year, reaching its highest in July (\$20.4M) and October (\$20.5M), while dropping in February (\$17.1M) and November (\$18.2M).
- Daily revenue stays mostly steady between \$7.3M and \$7.8M, with a small rise around the 15th day and a clear dip toward the end of the month (Day 30).

Customer Overview Dashboard



Performance Analysis Dashboard



Strategic Recommendations

Boost Core Strengths: Focus on Clothing, Shoes, and Technology, which drive over 90% of total revenue. Strengthen inventory, discounts, and marketing in these areas, and target female customers aged 56–69 who generate the highest sales.

Expand Market Reach: Attract Male and younger customers through tailored offers, bundled pricing, and lifestyle-based marketing.

Improve Supply Chain Efficiency : Ensure continuous stock for top-selling categories through better demand forecasting and faster restocking to prevent stockouts and lost sales.

Digitize Payments: Encourage Credit/Debit card use through small rewards to reduce cash-handling risks, speed up billing, and improve customer data insights.

Loyalty & Marketing Focus: Strengthen loyalty programs and personalized marketing for high-value female customers aged 56–69 to boost retention and lifetime value (LTV).

Thank you very much!

