PRDA – 05 Customer Data Analysis

Istanbul | 2021-2023 |

PTID-CDA-JUN-25-592

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Methodology

Data Cleaning

The date column with incorrect data type was converted to the appropriate data type.

Data Modelling

Used Power Query to create Fact and Dimension tables, connected through many-to-one relationships. DAX functions helped build key measures like Revenue, Average Transaction, and Customer Count for deeper insights.

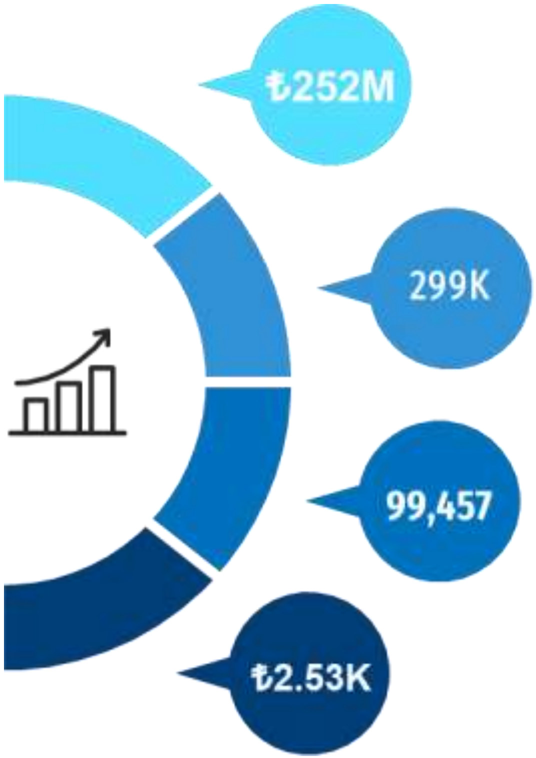
Data Assumption

Data covered Jan–Mar 2023 only, with complete entries, valid demographics, and values in Turkish Lira.

Data Exploration

Explored structure and patterns using Power BI's Data View, Query Editor, and visual summaries to guide segmentation.

Business Performance Overview



Revenue

Reflects strong sales performance and consistent customer demand across mall outlets.

Quantity

High product movement indicates healthy inventory turnover and purchase volume.

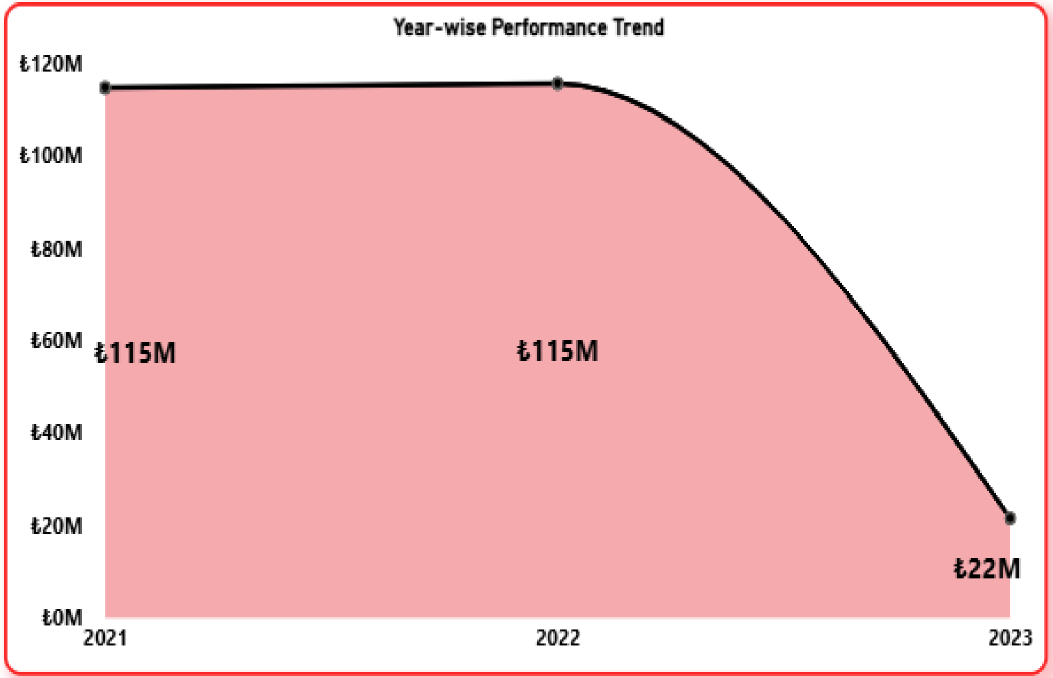
Customers

A solid customer base, showing strong footfall and brand engagement.

Average Transaction

Suggests high spending per visit, pointing to quality customers and upsell potential.

Year – Wise Performance



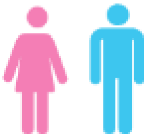
2021

2022

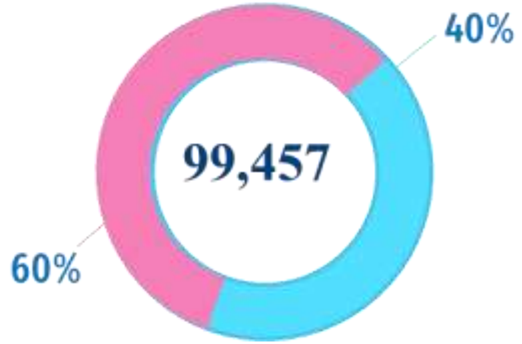
2023

Strong growth in 2021 & 2022, with a **sharp dip in 2023** (₺22M) due to **partial data (Jan–Mar)**.

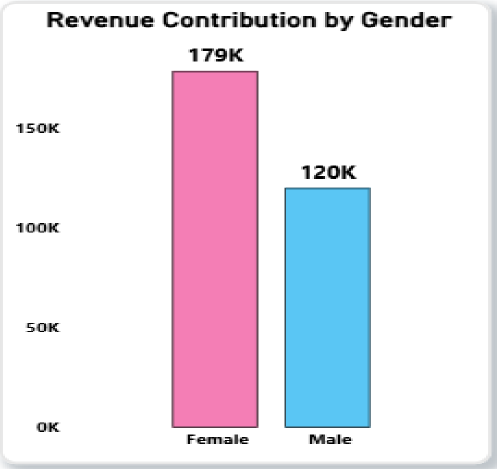
Who Leads the Shopping? A Gender Comparison



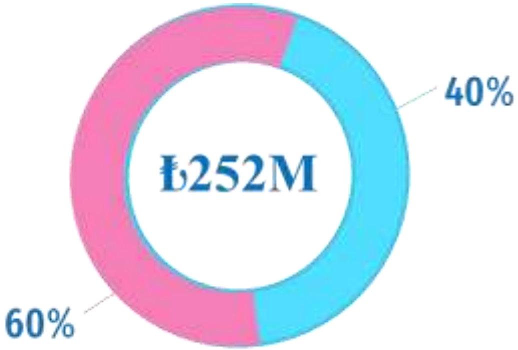
Count



Quantity Sold



Revenue



Gender Count

Gender	Total Customers
Female	59,482
Male	39,975
Total	99,457

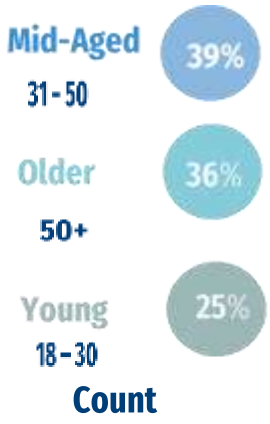
Quantity Sold

Gender	Total Quantity
Female	1,78,659
Male	1,20,053
Total	2,98,712

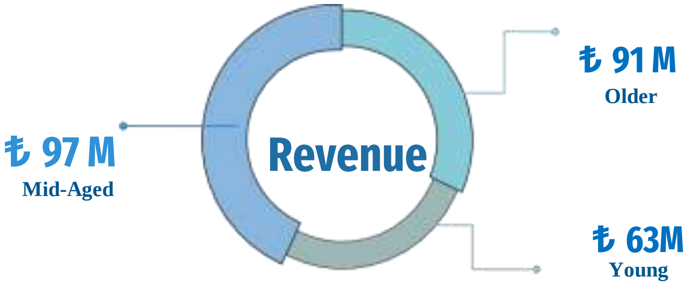
Revenue

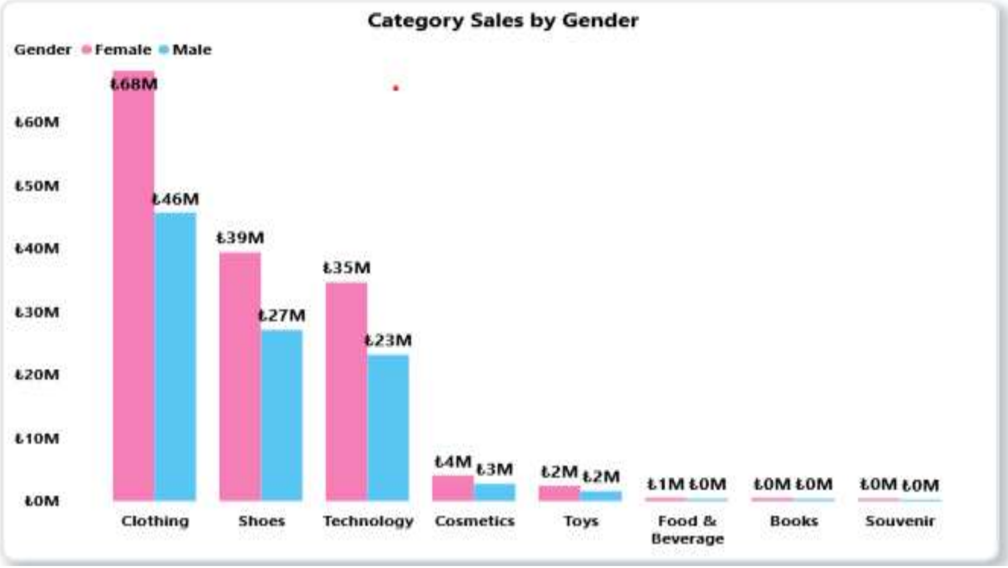
Gender	Total Revenue
Female	৳15,02,07,136.02
Male	৳10,12,98,658.23
Total	৳25,15,05,794.25

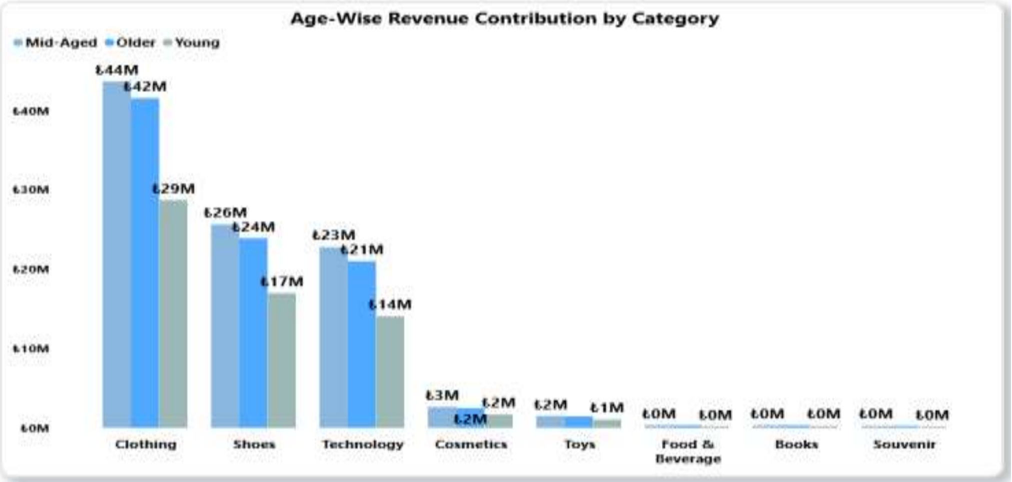
Who Shops the Most? An Age-Wise Comparison



- **Mid-aged customers (39%)** drive the highest revenue (**₺97M**) and lead in quantity sold (**115K units**).
- **Older customers (36%)** remain strong contributors with **₺91M** in revenue**,** and quantity sold**(109k)** units indicating strong and consistent purchasing power
- **Young shoppers (25%)** show lower engagement, with only **₺63M** revenue and **75K** quantity sold.
- A clear correlation exists between **age and purchase volume/value** — older age groups drive the majority of sales.
- Businesses should **prioritize mid-aged and older demographics** while exploring ways to better engage younger consumers.

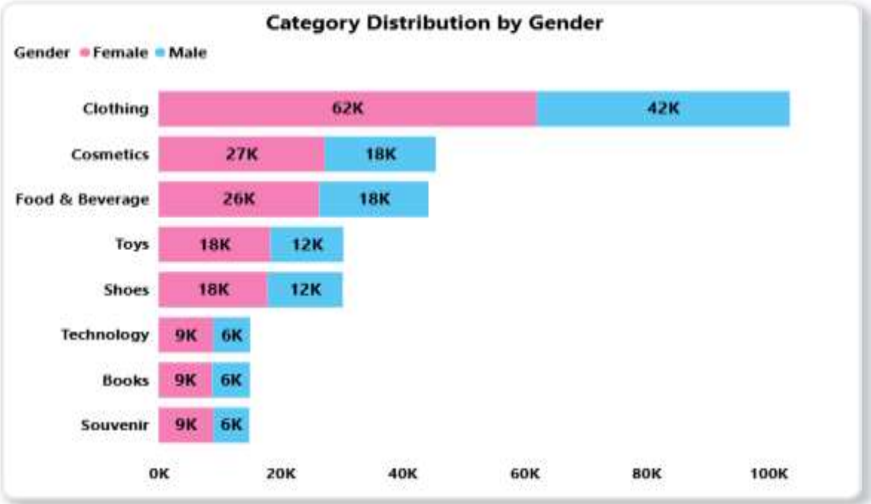


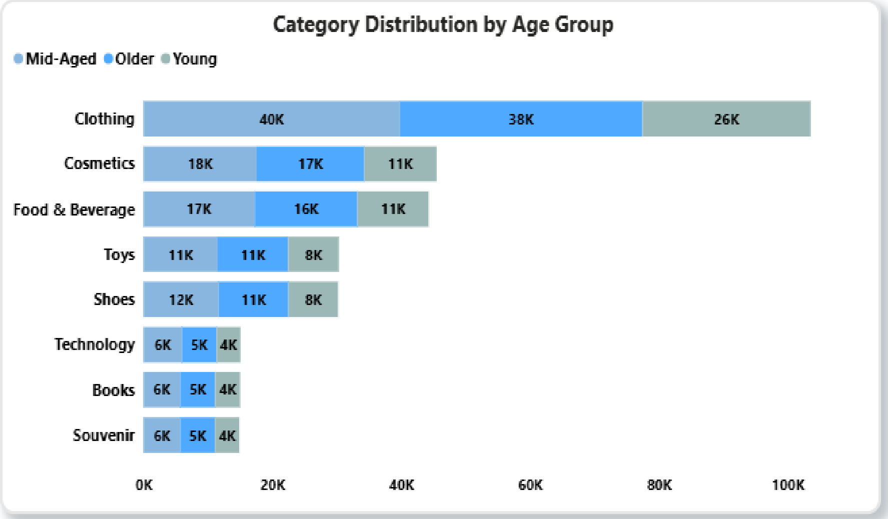




Category-Wise Revenue Comparison by Gender & Age Group

- **Clothing** leads revenue across all genders and age groups.
- **Females outspend males** in top categories like Clothing, Shoes, and Technology.
- **Mid-aged shoppers** are the biggest spenders, especially on Clothing and Shoes.
- **Younger and older groups** contribute less, indicating lower purchasing power.
- **Cosmetics, Toys, and Souvenirs** show limited demographic variation.
- **Books and Food & Beverage** generate the lowest revenue across all segments.



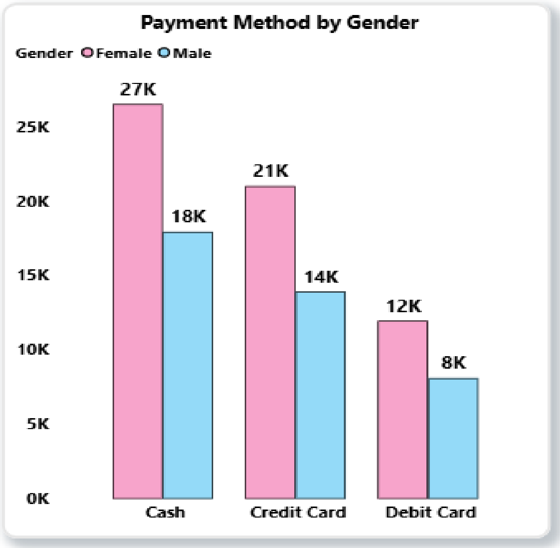


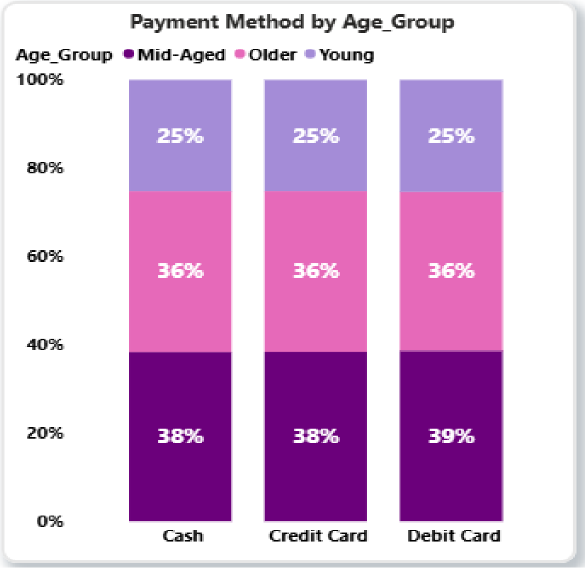
Who Buys What?
Category Preferences Across Segments

- ➢ **Women** lead in high-engagement categories like **Clothing (62K)** and **Cosmetics (27K)**.
- ➢ **Men** also show notable interest in **Cosmetics (18K)** — higher than their preference for **Books (12K)**.
- ➢ **Technology**, **Toys**, and **Shoes** are relatively more preferred by men.
- ➢ **Souvenirs** show a balanced split between both genders.

- ➢ **Mid-aged** customers are the top spenders and lead most product categories.
- ➢ **Older** buyers show surprisingly high engagement, especially in **Clothing(38K) and Cosmetics(17K)**.
- ➢ **Young shoppers** focus on **Clothing**, **Cosmetics,** and **Shoes and Toys**, suggesting a trend-driven purchase style.

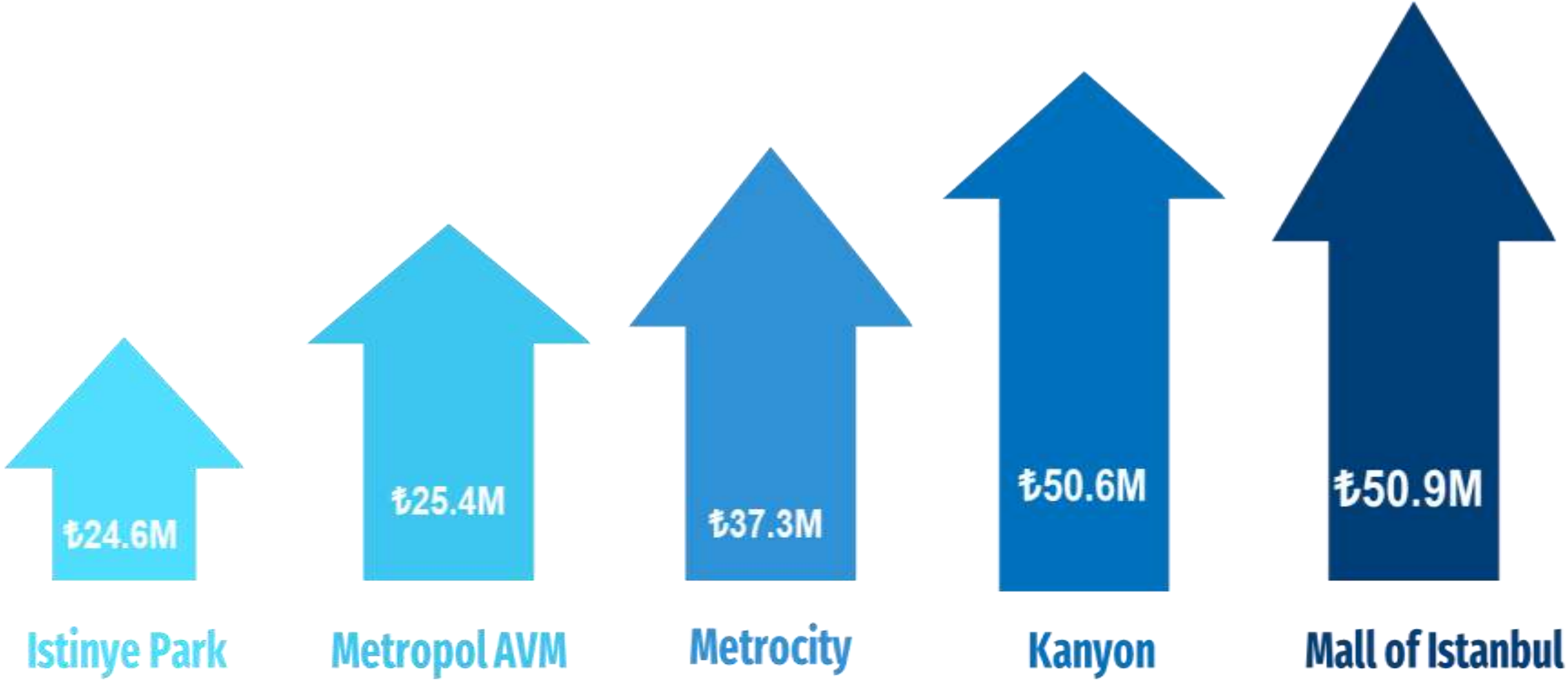
Cash or Card? Unpacking Payment Behaviors

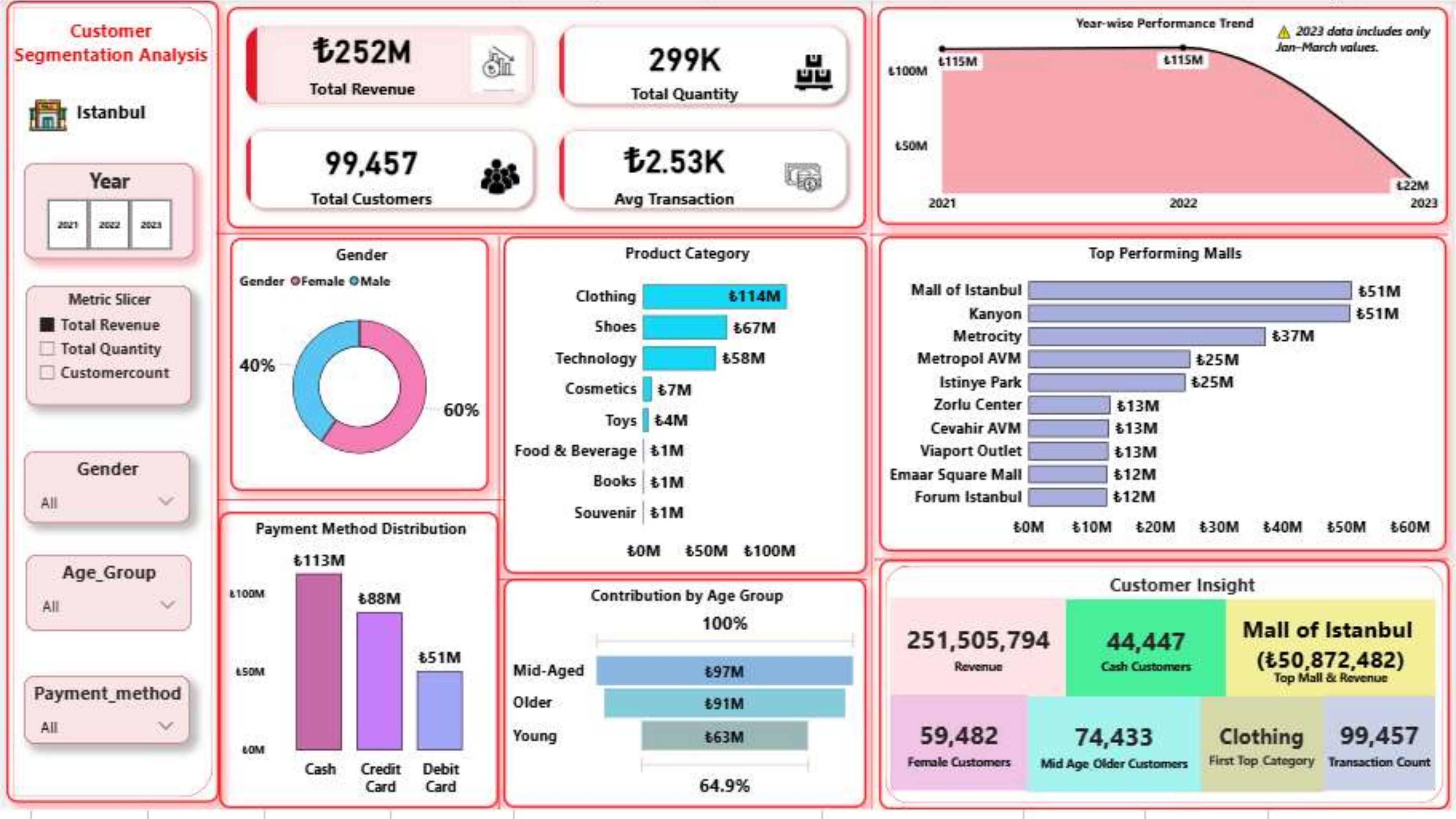




- **Cash dominates** with **45%** of all transactions, especially among female and mid-aged customers.
- **Cards (Credit & Debit)** make up **55%**, with higher usage by **male** and **young shoppers**.
- **Gender and age influence payment preferences**, showing a clear divide in digital vs. traditional behavior.

Top 5 Malls


₺24.6M
₺25.4M
₺37.3M
₺50.6M
₺50.9M
Istinye Park
Metropol AVM
Metrocity
Kanyon
Mall of Istanbul


Customer Segmentation Analysis
Istanbul
Year
2021
2022
2023
Metric Slicer
Total Revenue
Total Quantity
Customercount
Gender
All
Age_Group
All
Payment_method
All
₺252M
Total Revenue
299K
Total Quantity
99,457
Total Customers
₺2.53K
Avg Transaction
Year-wise Performance Trend
⚠ 2023 data includes only Jan–March values.
₺100M
₺50M
₺115M
₺115M
₺22M
2021
2022
2023
Gender
Gender Female Male
40%
60%
Product Category
Clothing ₺114M
Shoes ₺67M
Technology ₺58M
Cosmetics ₺7M
Toys ₺4M
Food & Beverage ₺1M
Books ₺1M
Souvenir ₺1M
₺0M ₺50M ₺100M
Top Performing Malls
Mall of Istanbul ₺51M
Kanyon ₺51M
Metrocity ₺37M
Metropol AVM ₺25M
Istinye Park ₺25M
Zorlu Center ₺13M
Cevahir AVM ₺13M
Viaport Outlet ₺13M
Emaar Square Mall ₺12M
Forum Istanbul ₺12M
₺0M ₺10M ₺20M ₺30M ₺40M ₺50M ₺60M
Payment Method Distribution
₺100M
₺50M
₺0M
₺113M
₺88M
₺51M
Cash
Credit Card
Debit Card
Contribution by Age Group
100%
Mid-Aged ₺97M
Older ₺91M
Young ₺63M
64.9%
Customer Insight
251,505,794
Revenue
44,447
Cash Customers
Mall of Istanbul (₺50,872,482)
Top Mall & Revenue
59,482
Female Customers
74,433
Mid Age Older Customers
Clothing
First Top Category
99,457
Transaction Count

Customer Insight using a 5D framework – Volume, Value, Variety, Behavior, and Loyalty

Volume Indicator

99,457

Transaction Count

Value Indicator

₺ 251,505,794

Revenue

Variety Indicator

Clothing

First Top_Category

Volume- Demographic split

74,433

Mid Age_Older Customers

Behavior – Payment Preference

44,447

Cash Customers

Volume- Gender Split

59,482

Female Customers

Loyalty- Highest Contributing Mall

Mall of Istanbul

(₺50,872,482)

Top Mall & Revenue

Summary

❑ Core Customer Segments

Mid-aged and female customers are the top spenders.

Male shoppers show lower activity — opportunity for targeted engagement.

❑ Category Trends

Clothing, Shoes, and Tech lead in sales.

Books, Toys, Souvenirs, and Cosmetics show niche appeal or low visibility.

❑ Payment Patterns

Cash is still dominant, followed by credit cards.

Digital wallets are rising, especially among younger customers.

❑ Demographic Engagement

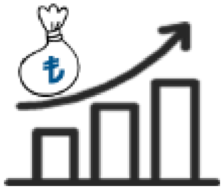
Mid-aged buyers drive the most revenue.

Younger and older groups show lower interest — possibly due to product fit or low visibility.

❑ Mall Performance Drivers

Top malls benefit from strong category mix, targeted campaigns, and favorable locations.

Recommendation
Scale What’s Working (High-Performers)



🎯 Focus on High-Spending Segments

Target mid-aged female shoppers with loyalty offers and campaigns.

👗 Boost Best-Selling Categories

Prioritize inventory for Clothing, Shoes, and Tech — top revenue drivers.

🛍 Replicate Winning Mall Strategies

Apply successful practices from Mall of Istanbul to weaker malls.

📅 Leverage Seasonal Trends

Align stock and promotions with peak shopping months to avoid overstocking.

💳 Encourage Digital Payments

Offer cashback or rewards to shift from cash to wallets/cards.

Strategic Recommendations
Fix What’s Lagging (Low-Performers)

Engage Underrepresented Groups

Run targeted campaigns for young males and senior shoppers.

Revamp Low-Revenue Categories

Improve visibility and bundling of Books, Toys, Cosmetics, and Souvenirs**.**

Reposition Underperforming Malls

Add pop-ups, events, and brand variety to attract footfall.

Improve Accessibility & Experience

Enhance layout, entertainment options, or local brand partnerships in low-traffic malls.

Push Digital Enablement

Promote QR-based payments and loyalty apps, especially among younger shoppers.

Thank You