



Customer Spending Behavior Analysis

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Executive Summary

Objective: Analyze spending patterns across categories and channels to optimize sales strategies.

Key Findings:

- Stable revenue between 2023 and 2024.
- Lifestyle & Health and Entertainment categories dominate spending.
- Payment preferences vary significantly by sales channel.

Recommendations:

- Targeted promotions in Q2 to counteract spending declines.
- Enhance loyalty programs for high-performing segments.

Introduction

Problem Statement: How do spending behaviors differ across categories, and which segments drive revenue?

Dataset: Analysis using public dataset from Kaggle: [Spending Habits by Category and Item](#). This dataset includes 10,000 transactions with 9 attributes,

Audience:

- **Business Executives:** For strategic decision-making.
- **Marketing & Sales Teams:** To optimize campaigns and promotions.
- **Product Managers:** To refine category-specific strategies.

Scope:

- Revenue trends, category analysis, pricing impact, and channel preferences.
- Strategic recommendations for sales optimization.

Methodology

Data Preprocessing:

Cleaned missing values, duplicates, and outliers.

Statistical Testing:

1. Correlation between Price Per Unit and Sales Quantity using Pearson and Spearman.
2. Payment method trends across channels using chi-square.

01

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03

Exploratory Analysis: Purchase frequency, category segmentation, payment method distribution.

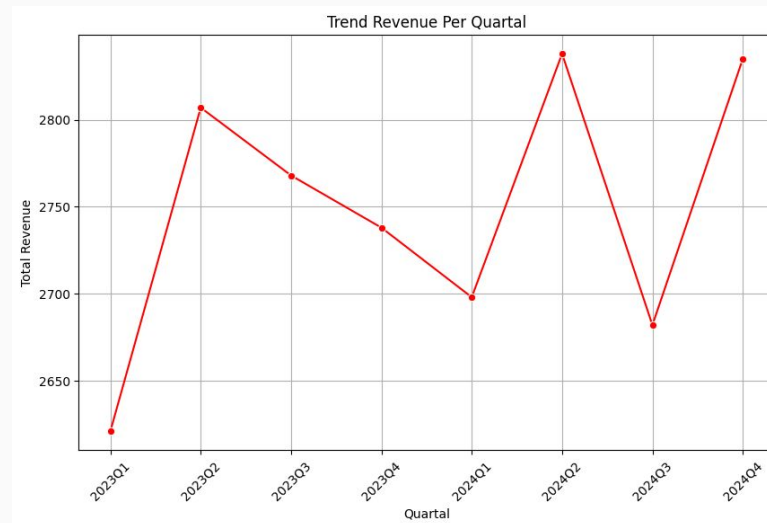
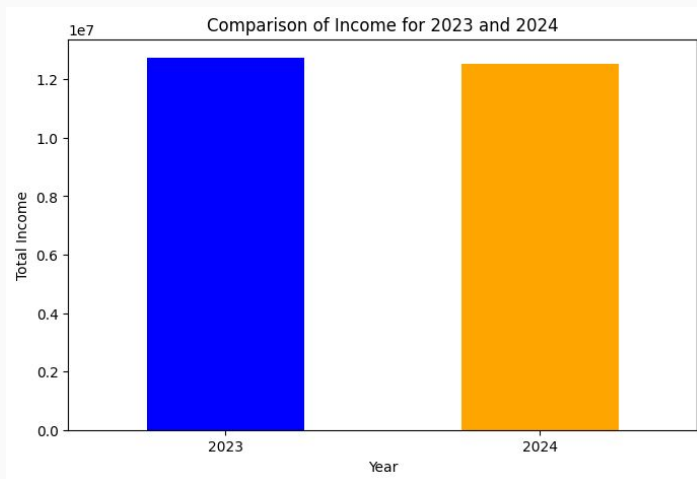
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Result (Findings & Impact)

INCOME STABILIZATION & EXPENDITURE STRATEGY



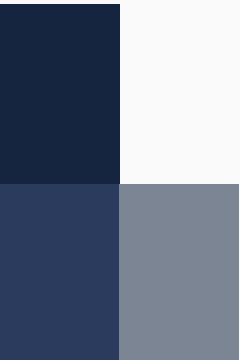



INCOME STABILIZATION & EXPENDITURE STRATEGY - FINDINGS AND IMPLICATIONS

Findings:

- Revenue remained stable (12.7M in 2023 vs 12.5M in 2024).
- Q2 spending declines after high Q1 expenditure.

Implications:

- Focus on volume growth (e.g., cross-selling) rather than price hikes.
 - Launch Q2 promotions (discounts, loyalty programs) to sustain sales.
- 
- 

DOMINATE THE LIFESTYLE & HEALTH CATEGORY



Findings:

- Lifestyle & Health is the dominant category.
- Entertainment (2nd largest) reflects demand for experiences.
- Smaller segments (e.g., Basic Needs) require targeted campaigns.

Implications:

- Offer membership packages/discounts to retain loyal customers.
- Use experience-based marketing (e.g., event bundles).
- Introduce product bundling for underperforming categories.

VOLUME-DRIVEN STRATEGY and INCREASED PAYMENT FLEXIBILITY ACROSS ALL CHANNELS

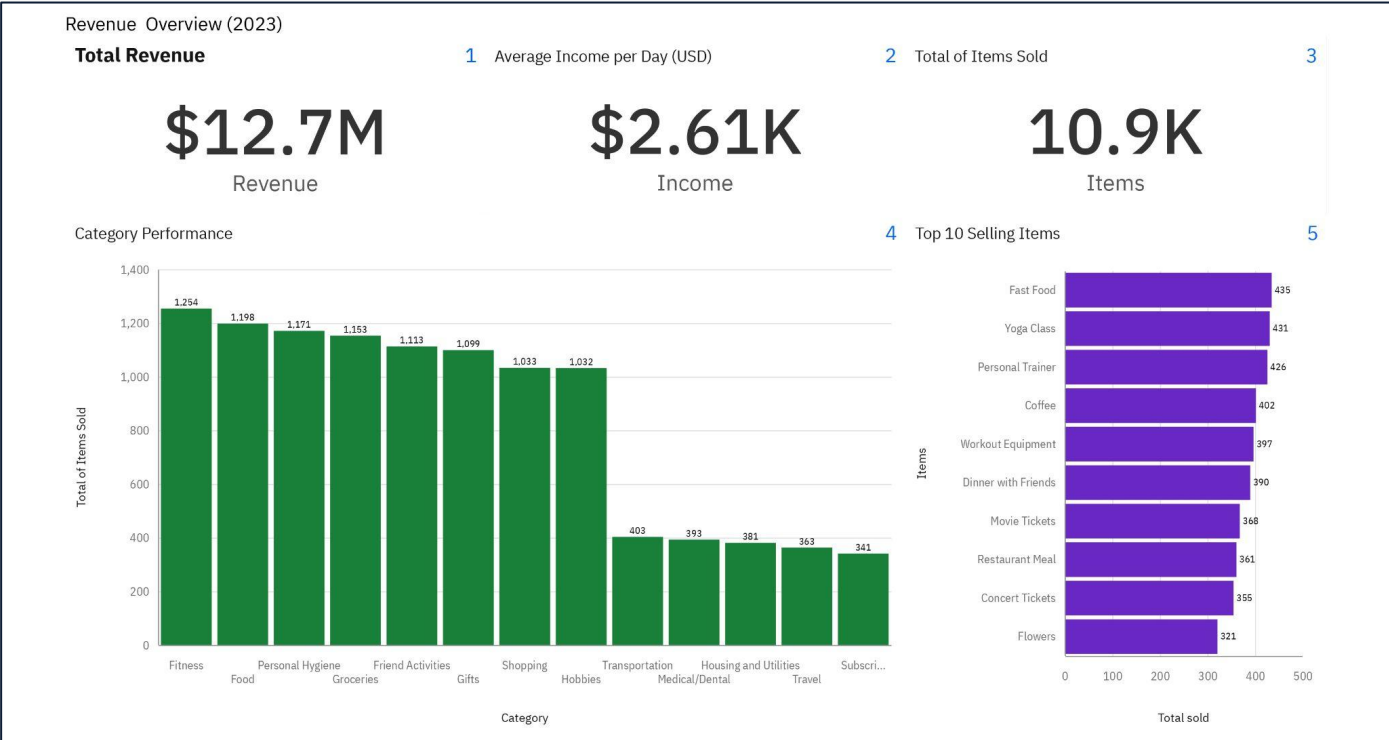
Findings:

- Price Per Unit has no significant impact on Sales Quantity.
- **In-Store:** Boost digital wallet promotions.
- **Online:** Expand cash payment options.
- **Mobile App:** Maintain balanced payment flexibility.

Implications:

- Prioritize volume-driven strategies over pricing adjustments.

DASHBOARD TAB 1



DASHBOARD TAB 2

Revenue Overview (2024)

Total Revenue

\$12.5M

Revenue

6 Average Income per Day (USD)

\$2.54K

Income

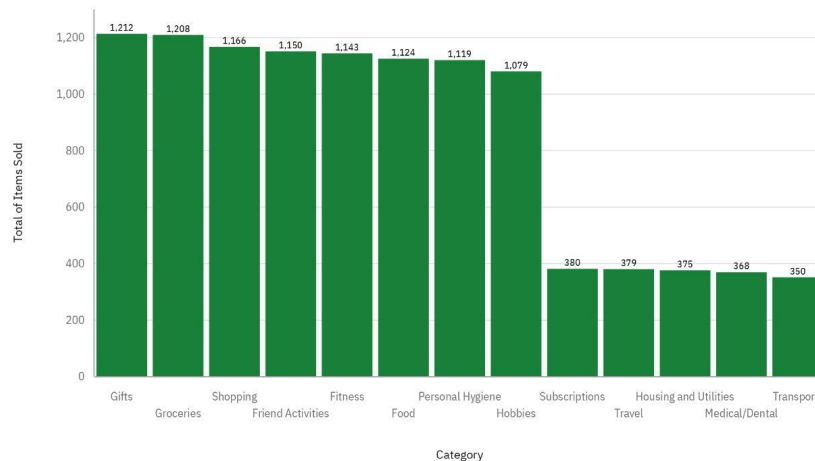
7 Total of Items Sold

11.1K

Items

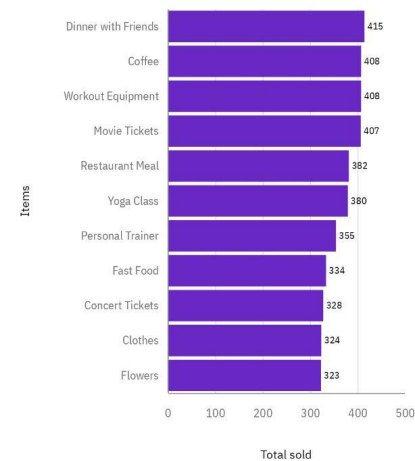
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Category Performance



9 Top 10 Selling Items

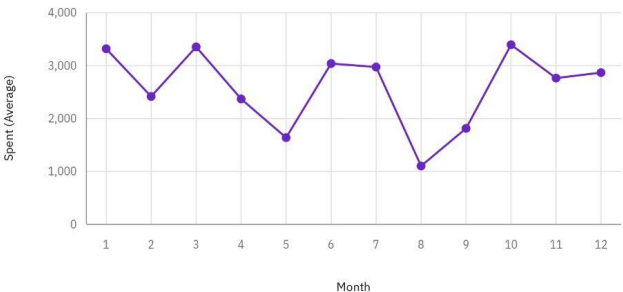
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DASHBOARD TAB 3

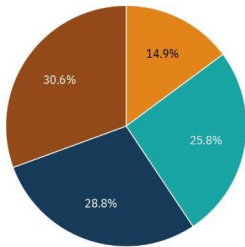
Payment and Sales Channels (2023-2024)

Trend by Month



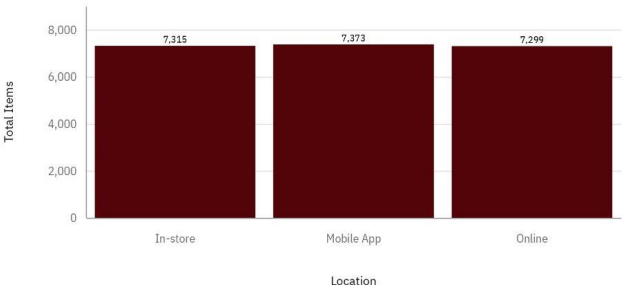
11 Payment Method Analysis

Payment Method
Debit Card Credit Card Cash Digital Wallet



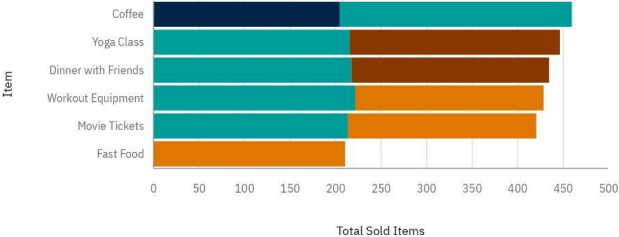
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Sales by Location



13 Top 10 Selling Items by Payment Method

Payment Method
Cash Credit Card Debit Card Digital Wallet



14



Discussion and Conclusion

Discussion

Key Insights:

- Category dominance reflects shifting consumer priorities (health, experiences).
- Channel-specific payment preferences highlight the need for tailored strategies.

Limitations:

- Limited data for 2025 (only January available).
- External factors (e.g., economic trends) not accounted for.

Conclusion

Summary:

- Stable revenue with seasonal spending patterns.
- Lifestyle & Health and Entertainment categories drive growth.

Recommendations:

- Q2 promotional campaigns.
- Segment-specific loyalty programs.
- Channel-optimized payment strategies.

Call to Action: Implement targeted initiatives to enhance customer retention and sales volume.



Disclaimer

This report is still being refined, your feedback means a lot!



Full Project



<https://github.com/hidayah24/data-analyst-portfolio/tree/main/Project-1-Customer-Spending-Behavior-Analysis>

Data Source



<https://www.kaggle.com/datasets/ahmedmohamed2003/spending-habits>

Analysis code



<https://github.com/hidayah24/data-analyst-portfolio/blob/main/Project-1-Customer-Spending-Behavior-Analysis/Customer%20Spending%20Behavior%20Analysis.ipynb>



Thanks!

Do you have any questions?

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