Customer Personality Analysis – Data Visualization Report

🎯 **Objective**: To analyze customer demographics, spending behavior, and campaign response using visual storytelling.

Page 1 – Customer Overview

Executive Summary

This page provides a snapshot of our customer base, covering demographics, education, and marital status distribution. The goal is to understand who our customers are before diving into their purchasing behavior.

Key Metrics

- **Total Customers: 2,240**
- **Average Age: 56 years**
- **Average Income: $52.24K**
- **Total Spending: $78M**

💡 **Insight:**

"Our customers are predominantly older adults with strong purchasing power. The average income exceeds $50K, and lifetime spending across the base totals $78M."

Education Distribution *(Bar Chart – Count of ID by Education)*

💡 **Insight:**

"Graduates form the largest education group, followed by PhD and Master's degree holders. The high level of education suggests customers are more likely to appreciate premium products and value-driven marketing."

### Age Group Breakdown *(Bar Chart – Count of Age Group)*

💡 **Insight:**

"Over 70% of customers are above 40 years old, with the largest segment being 60+. Younger customers under 30 form a very small share, indicating potential for targeted youth engagement strategies."

Marital Status Distribution *(Donut Chart – Count of ID by Marital Status)*

💡 **Insight:**

"Married customers dominate at 38.57%, followed by those living together at 25.89%. While niche categories like 'Alone' and 'Widow' are smaller, they represent unique lifestyle-driven marketing opportunities."
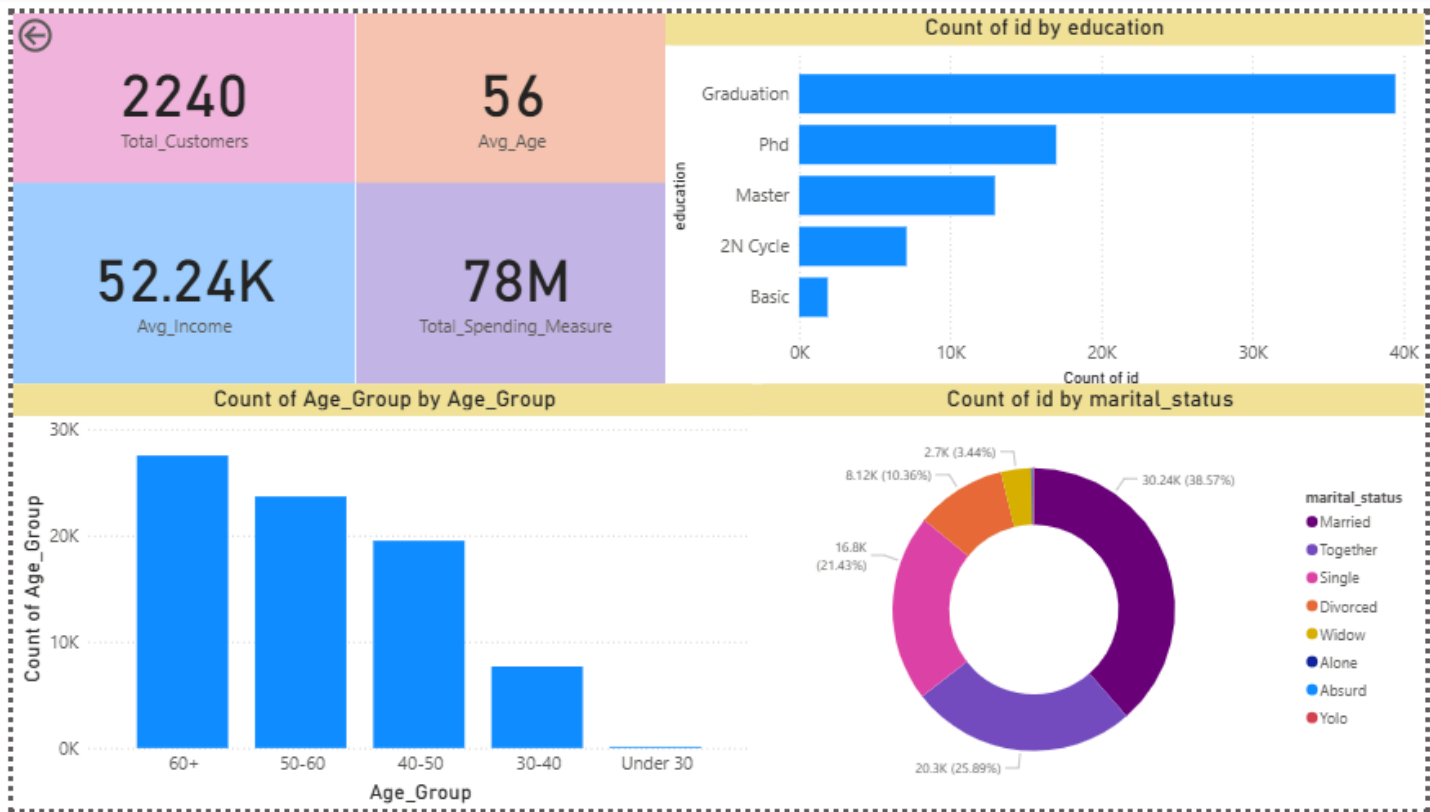
Page 2 – Spending Behavior

Executive Summary

This page examines how customers spend across income groups, education levels, and product categories. It highlights spending concentration, product preferences, and whether higher income directly correlates with higher spending.

Income Group vs Product Category *(Stacked Bar Chart – Sum of Amount)*

💡 **Insight:**

"Very High and High income groups account for the bulk of spending, with wine and meat products dominating purchases. Lower-income segments contribute minimally to total revenue."

Income vs Total Spending *(Scatter Plot – Marital Status as Color)*

💡 **Insight:**

"There is no clear correlation between income and spending — several medium-income customers spend as much as high-income customers. Married and 'Together' customers dominate high-spending clusters."

## Product Category Breakdown *(Treemap – Sum of Amount)*

💡 **Insight:**

"Wines lead all product categories, followed by meat products. Gold products, while smaller in volume, likely represent high-margin purchases."

Spending by Education *(Donut Chart – Sum of Total Spending)*

💡 **Insight:**

"Graduates contribute over half (52.07%) of total spending, followed by those with Master's and PhDs. This reinforces the observation that our customer base is well-educated and financially capable."
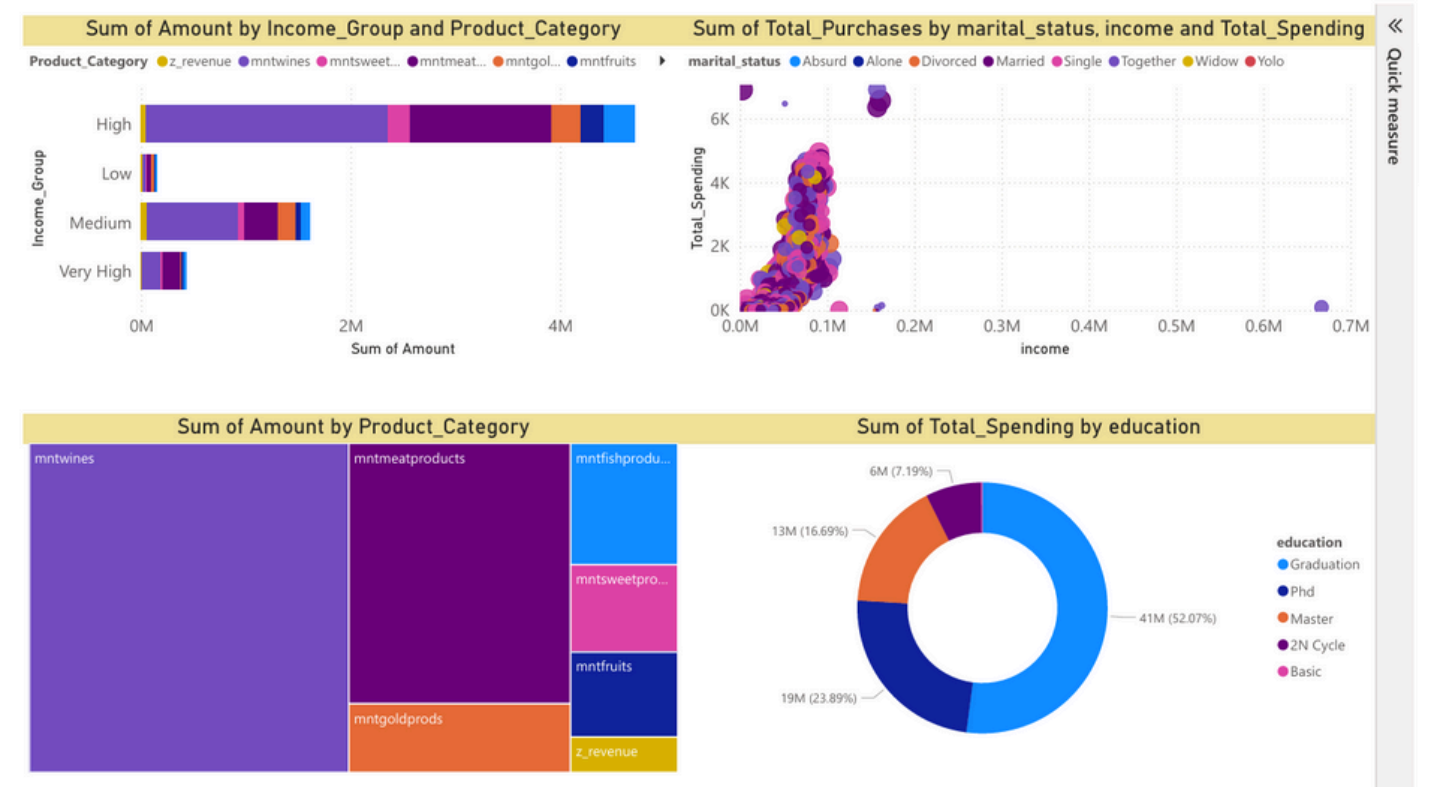
Page 3 – Purchase Channel Analysis

🧠 Executive Summary

This page explores how customers interact with different purchase channels — store, web, and catalog — and how recent activity influences purchasing behavior. It highlights channel preferences, conversion gaps, and the impact of recency on total purchases.

📊 Purchase Channel Distribution

(Bar Chart – Count of Purchases by Channel)
💡 **Insight:**
 "Store purchases dominate with the highest transaction count, followed by web and catalog. Despite high web traffic, conversion remains lower, suggesting potential for UX or targeting improvements."

📈 Monthly Purchase Trends

(Line Chart – Purchases Over Time)
💡 **Insight:**
 "Purchases remain steady across months, with slight peaks around mid-year. This consistency indicates a stable customer base with predictable buying cycles."

📊 Recency vs Purchase Volume

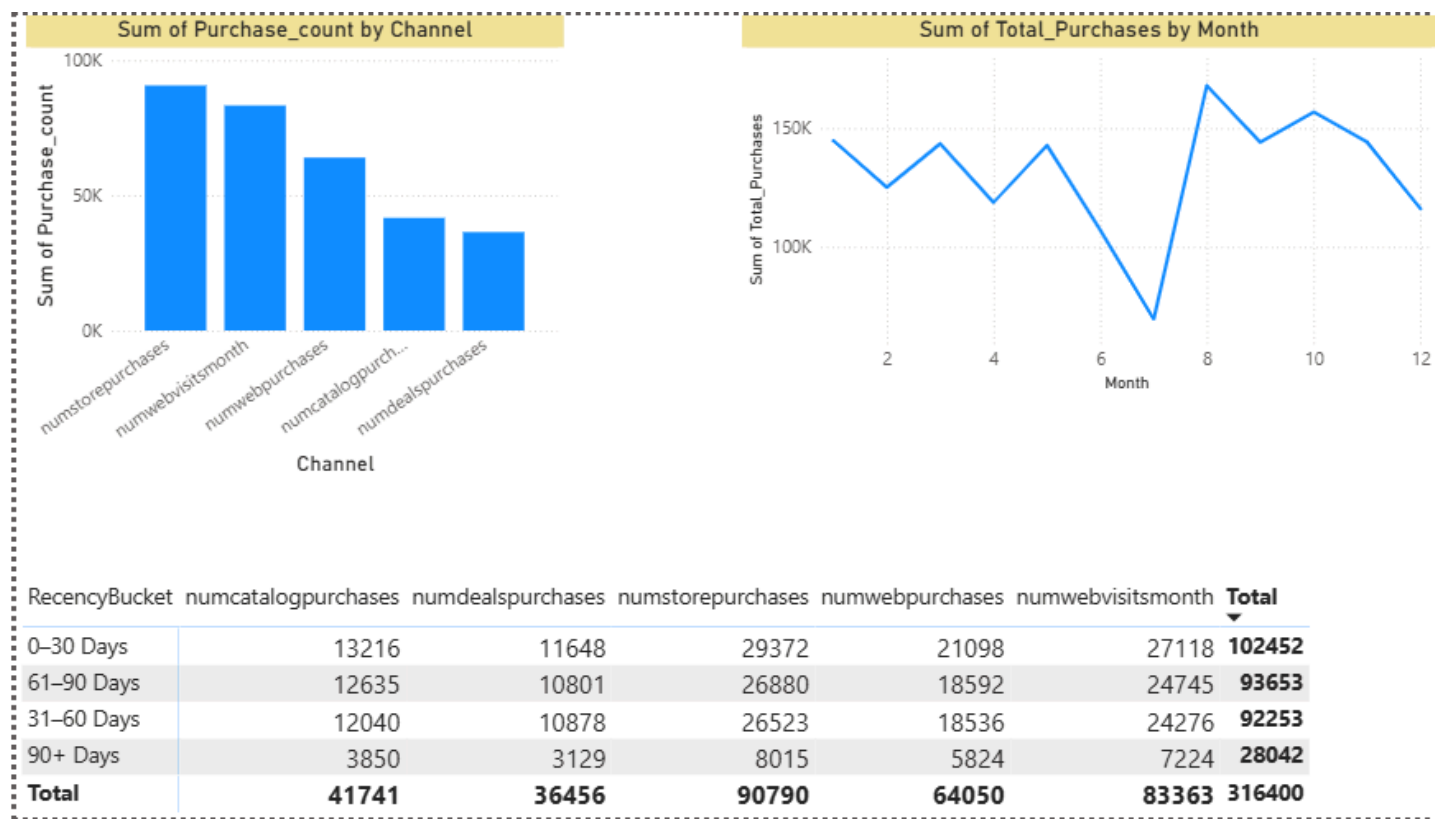**(Table or Bar Chart – Recency Buckets vs Total Purchases)**
💡 **Insight:**
"Customers active in the last 30 days contribute the highest volume of purchases. Engagement drops sharply beyond 60 days, emphasizing the need for timely reactivation strategies."

📊 Channel vs Recency

(Stacked Bar Chart – Purchase Channel by Recency Group)
💡 **Insight:**
 "Store remains dominant across all recency groups, but catalog purchases show a surprising uptick among customers inactive for 60+ days — possibly driven by seasonal campaigns or legacy habits."

Sum of Purchase_count by Channel

Sum of Total_Purchases by Month

RecencyBucket	numcatalogpurchases	numdealspurchases	numstorepurchases	numwebpurchases	numwebvisitsmonth	Total
0–30 Days	13216	11648	29372	21098	27118	**102452**
61–90 Days	12635	10801	26880	18592	24745	**93653**
31–60 Days	12040	10878	26523	18536	24276	**92253**
90+ Days	3850	3129	8015	5824	7224	**28042**
Total	**41741**	**36456**	**90790**	**64050**	**83363**	316400

📄 **Page 4 – Campaign Effectiveness**

🧠 Executive Summary

This page evaluates how different income groups respond to marketing campaigns. It highlights which segments are most receptive and provides insights for optimizing future targeting strategies.

📊 Campaign Response by Income Group

**(Horizontal Bar Chart – Count of ResponseRate by Income_Group)**
💡 **Insight:**
 "Medium-income customers show the highest response rate, followed by high-income groups. Surprisingly, very high-income customers respond the least, suggesting that premium segments may require more personalized or value-driven messaging."

📈 Strategic Implications

💡 **Recommendations:**

- **Focus on Medium-Income Segment**: Tailor messaging and offers to this group to maximize ROI.
- **Reassess High-Income Strategy**: Explore why very high-income customers are disengaged — consider exclusive campaigns or loyalty incentives.
- **Low-Income Engagement**: Test low-cost channels like SMS or WhatsApp to

Count of ResponseRate by Income_Group
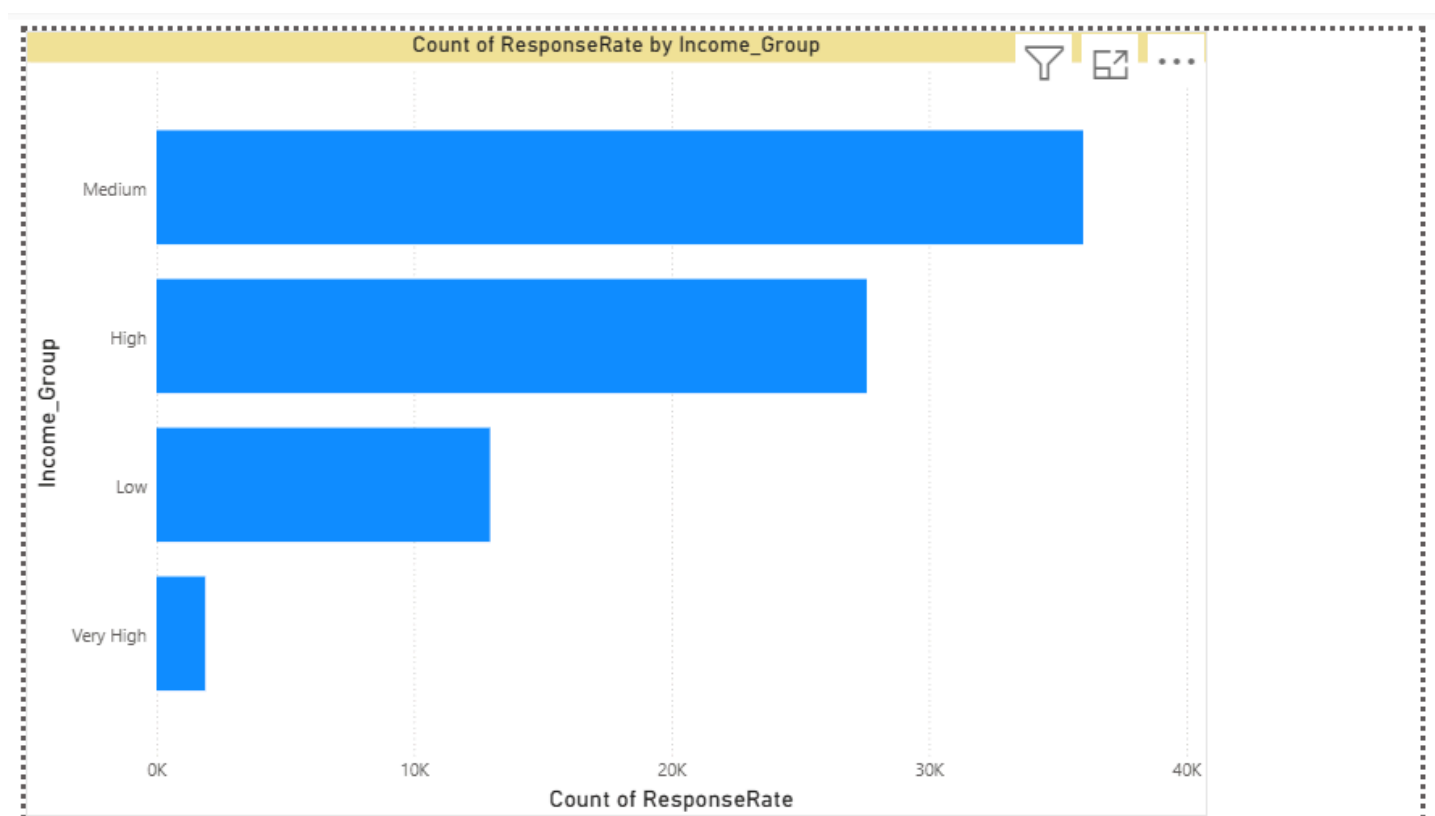
Summary & Recommendations

🧠 Executive Summary

This page consolidates key findings from the analysis and outlines actionable recommendations for marketing, engagement, and strategic planning.

📌 Key Findings

- **Demographics**: Majority are married graduates aged 35–50 with medium to high income
- **Spending Behavior**: Wines and meats dominate purchases; graduates contribute over 50% of total spending
- **Purchase Channels**: Store is the most preferred channel; recent activity drives purchase volume
- **Campaign Effectiveness**: Medium-income customers respond best; very high-income group shows low engagement

🎯 Strategic Recommendations

- **Target Medium-Income Graduates**: Prioritize this segment for campaign optimization and loyalty programs
- **Enhance Web Conversion**: Improve UX and personalization to convert high web traffic into purchases

- **Re-engage Inactive Customers**: Use catalog and seasonal campaigns to revive interest among dormant users
- **Refine High-Income Strategy**: Explore exclusive offers or premium experiences to boost engagement

🛠 Tools & Dataset

- **Tools Used**: Power BI, Excel, Canva
- **Dataset**: *Customer Personality Analysis* from Kaggle
- **Prepared By**: Mansi Rawal
- **Internship Task**: Task 2 – Data Visualization and Storytelling