Course-3 Project

Retail Customer Retention Analytics – ADDIDAS
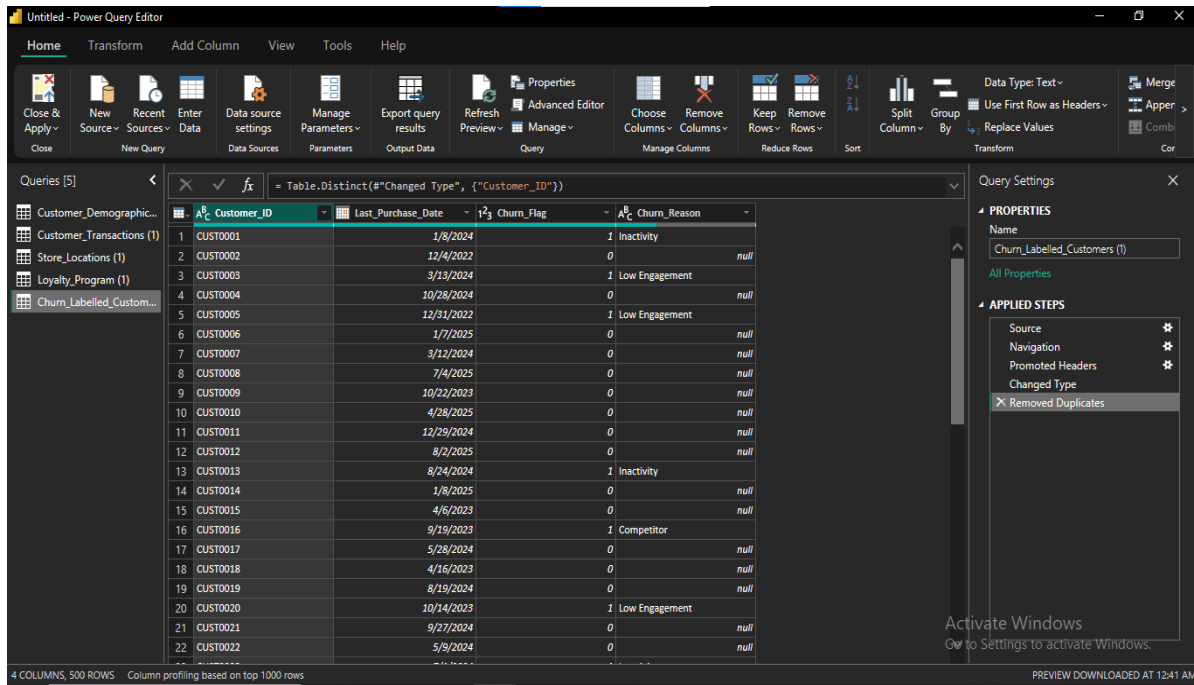
Name: Kanishka Kumar

Batch: 15th aug Data Science

Task 1: Data Modeling & Cleaning

Loaded all datasets into Power BI using Power Query.
Cleaned missing values, removed duplicates, and corrected data types.
Created calculated columns for membership duration and transaction time analysis.

Screenshot 1 — Power Query Editor, Customer_Transactions (1) query

Formula bar: `= Table.RenameColumns(#"Inserted Year",{{"Year", "Transaction_Year"}})`

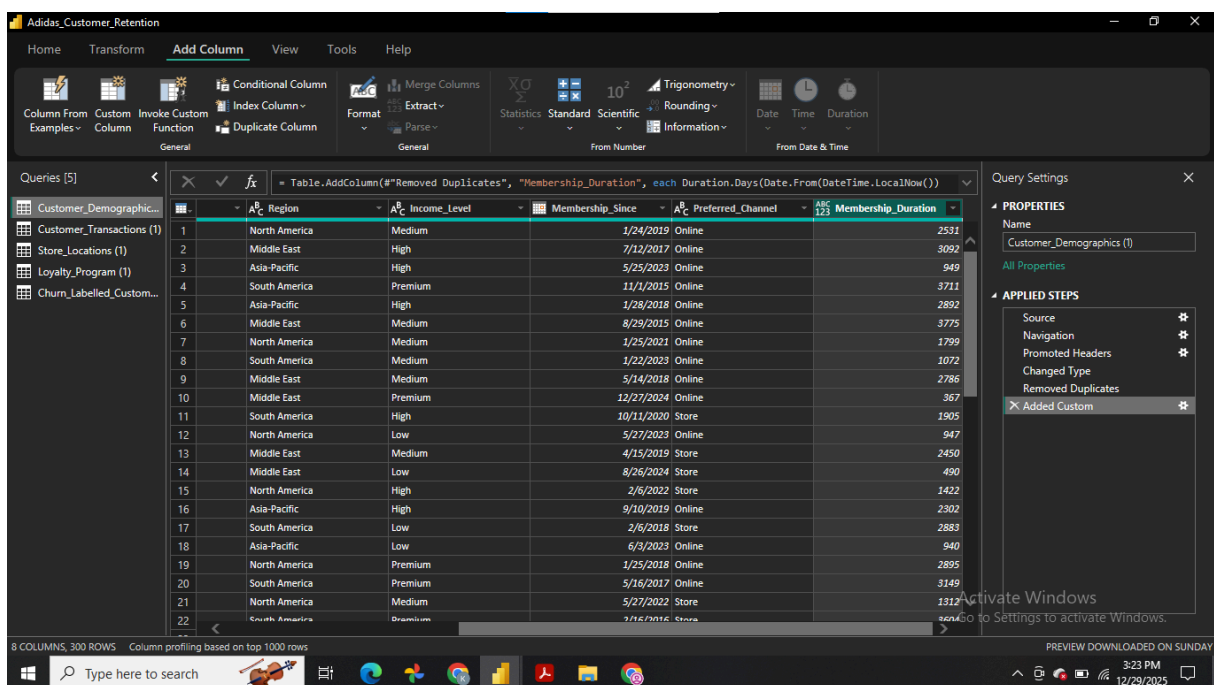|	Product_Category	Transaction_Date	Amount	Promotion_Applied	Transaction_Year
1	Footwear	6/27/2023	372.57	Yes	2023
2	Accessories	7/28/2023	216.02	Yes	2023
3	Apparel	8/24/2025	433.22	Yes	2025
4	Apparel	8/6/2025	142.29	Yes	2025
5	Footwear	10/28/2022	181.87	Yes	2022
6	Apparel	11/4/2022	89.68	No	2022
7	Accessories	1/11/2023	63.7	No	2023
8	Footwear	6/23/2024	246.53	Yes	2024
9	Footwear	8/18/2023	167.57	Yes	2023
10	Accessories	1/13/2023	28.76	No	2023
11	Footwear	11/10/2024	186.47	Yes	2024
12	Apparel	1/16/2023	411	Yes	2023
13	Accessories	6/20/2023	189.68	Yes	2023
14	Apparel	4/3/2025	87.92	Yes	2025
15	Accessories	1/22/2024	80.96	Yes	2024
16	Accessories	11/22/2023	386.82	No	2023
17	Footwear	7/1/2025	122.56	No	2025
18	Apparel	9/25/2022	295.55	Yes	2022
19	Footwear	10/26/2023	172.81	Yes	2023
20	Footwear	11/2/2022	60.02	No	2022
21	Accessories	12/3/2024	219.19	Yes	2024
22	Footwear	6/30/2024	496.7	Yes	2024

Queries [5]: Customer_Demographic..., Customer_Transactions (1), Store_Locations (1), Loyalty_Program (1), Churn_Labelled_Custom...

Query Settings — PROPERTIES — Name: Customer_Transactions (1)

APPLIED STEPS: Source, Navigation, Promoted Headers, Changed Type, Removed Duplicates, Inserted Year, Renamed Columns

8 COLUMNS, 999+ ROWS   Column profiling based on top 1000 rows

Screenshot 2 — Power Query Editor, Customer_Transactions (1) query

Formula bar: `= Table.RenameColumns(#"Inserted Month Name",{{"Month Name", "Transaction_Month"}})`

	...tory	Transaction_Date	Amount	Promotion_Applied	Transaction_Year	Transaction_Month
1		6/27/2023	372.57	Yes	2023	June
2		7/28/2023	216.02	Yes	2023	July
3		8/24/2025	433.22	Yes	2025	August
4		8/6/2025	142.29	Yes	2025	August
5		10/28/2022	181.87	Yes	2022	October
6		11/4/2022	89.68	No	2022	November
7		1/11/2023	63.7	No	2023	January
8		6/23/2024	246.53	No	2024	June
9		8/18/2023	167.57	Yes	2023	August
10		1/13/2023	28.76	No	2023	January
11		11/10/2024	186.47	Yes	2024	November
12		1/16/2023	411	Yes	2023	January
13		6/20/2023	189.68	Yes	2023	June
14		4/3/2025	87.92	Yes	2025	April
15		1/22/2024	80.96	No	2024	January
16		11/22/2023	386.82	No	2023	November
17		7/1/2025	122.56	No	2025	July
18		9/25/2022	295.55	Yes	2022	September
19		10/26/2023	172.81	Yes	2023	October
20		11/2/2022	60.02	No	2022	November
21		12/3/2024	219.19	Yes	2024	December
22		6/30/2024	496.7	Yes	2024	June

Queries [5]: Customer_Demographic..., Customer_Transactions (1), Store_Locations (1), Loyalty_Program (1), Churn_Labelled_Custom...

Query Settings — PROPERTIES — Name: Customer_Transactions (1)

APPLIED STEPS: Source, Navigation, Promoted Headers, Changed Type, Removed Duplicates, Inserted Year, Renamed Columns, Inserted Month Name, Renamed Columns1

9 COLUMNS, 999+ ROWS   Column profiling based on top 1000 rows

Task 2: Churn & Retention Metrics

Calculated churn rate using churned and total customers.
Visualized churn trends across region, income group, channel, and loyalty tier to identify high-risk segments.

- **Churn Rate KPI:**
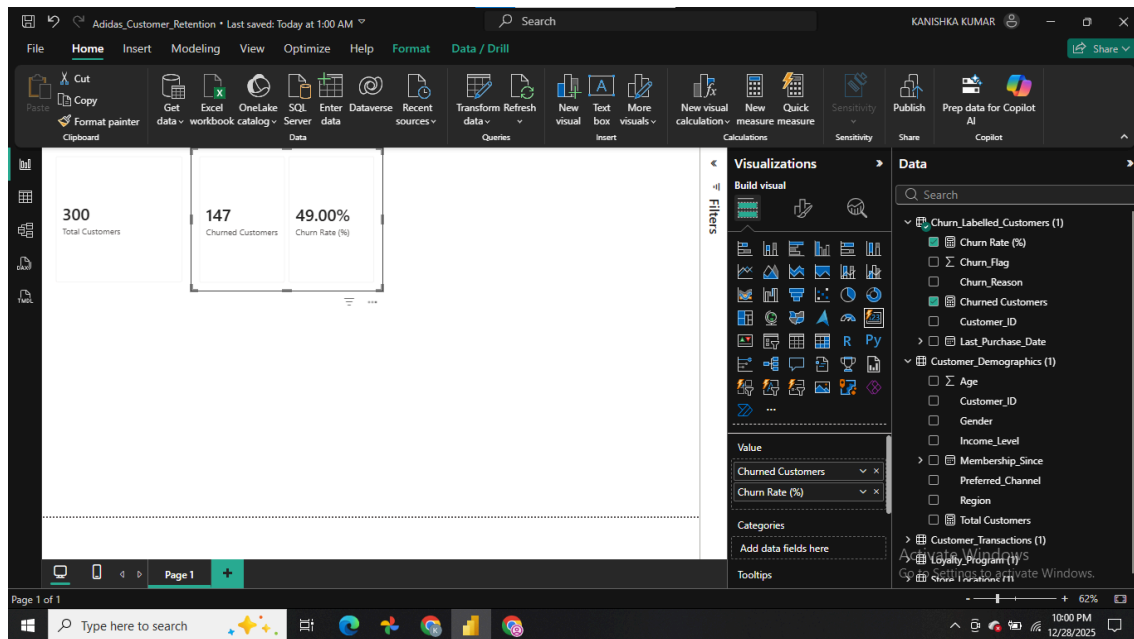
- **Churn by Region:**
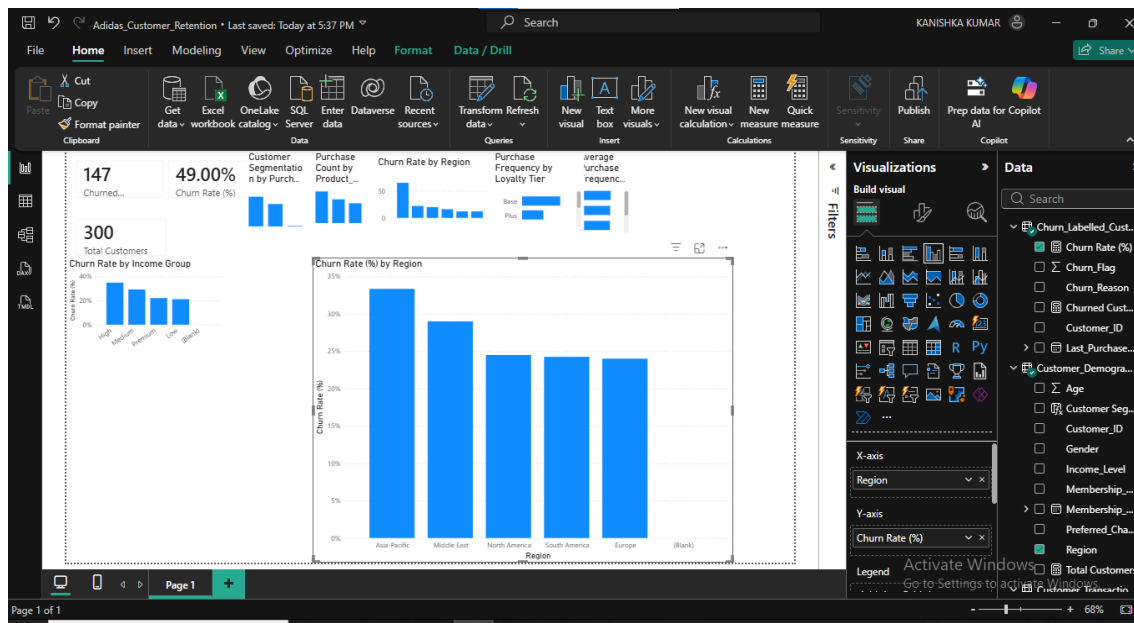
- **Churn by Income Group:**
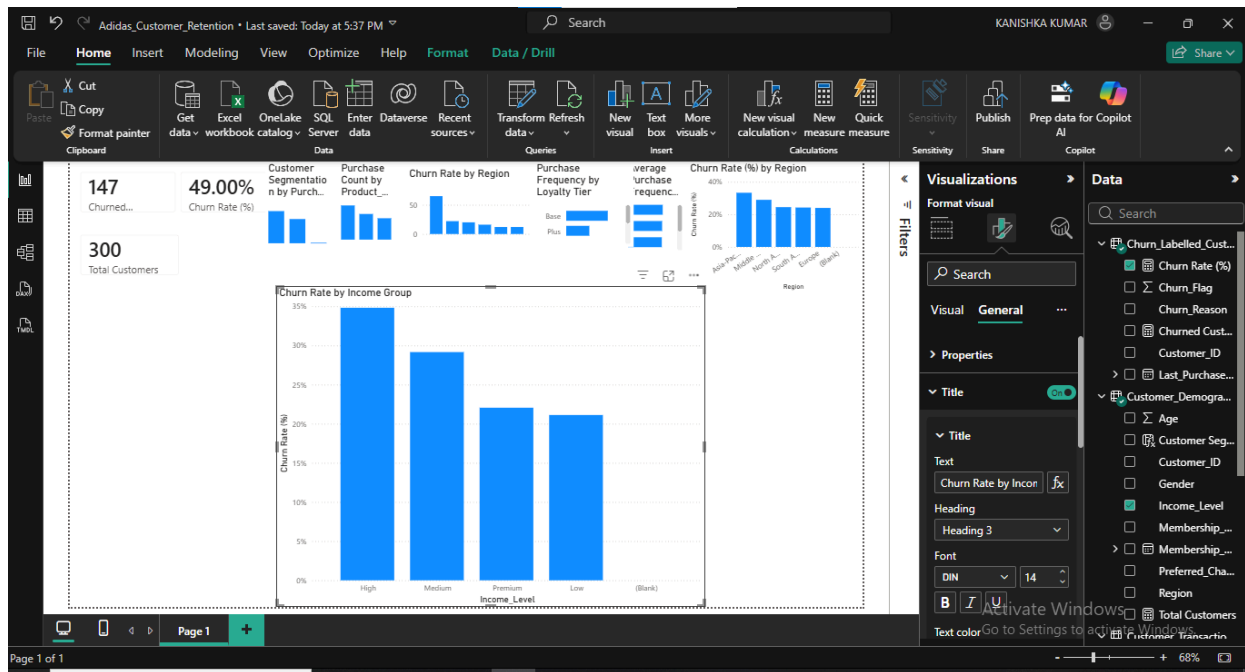
- **Churn by Channel:**
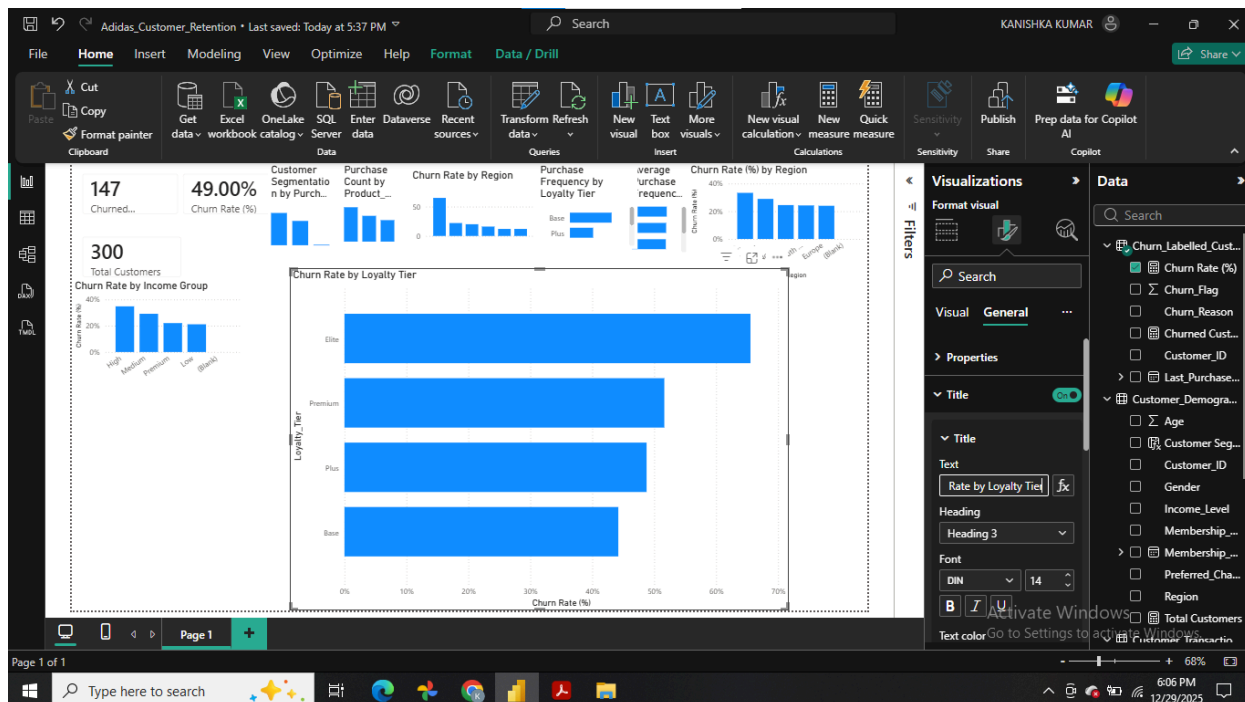
● **Funnel Chart:**
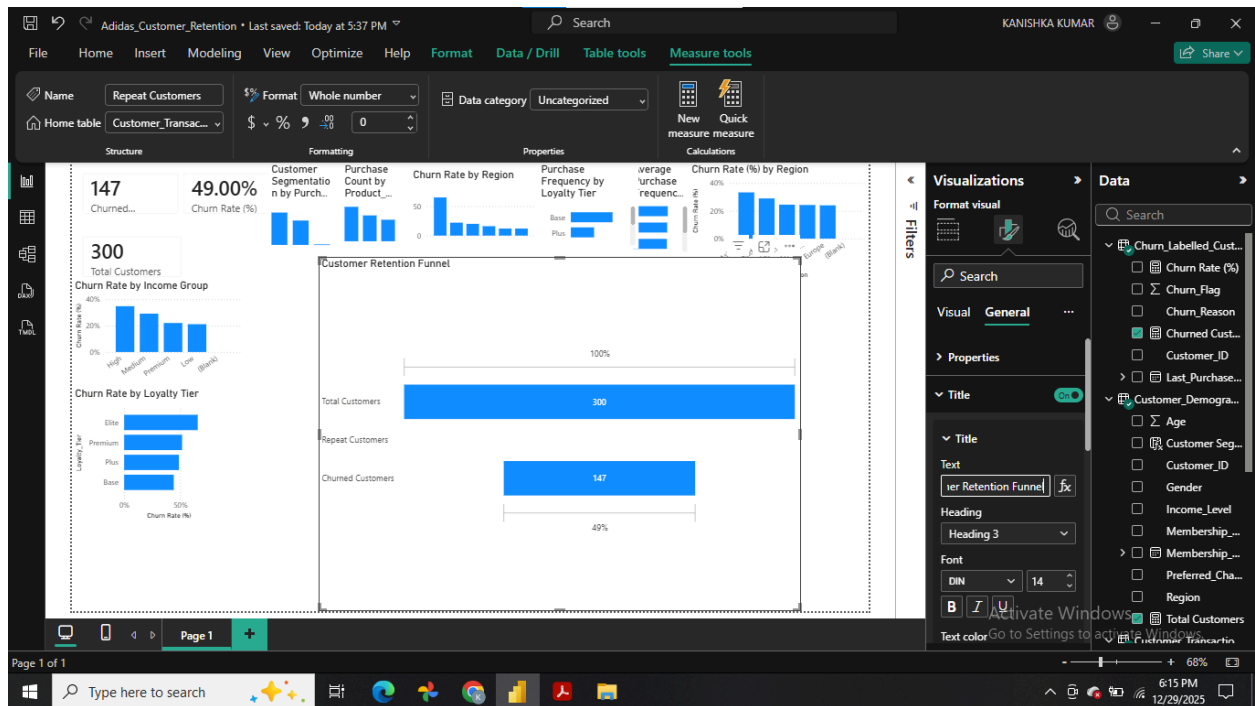
Task 3: Repeat Purchase Analysis

Segmented customers based on purchase frequency.
Identified high-value loyal customers and their preferred product categories.

● **Customer segmentation (Low / Mid / High):**
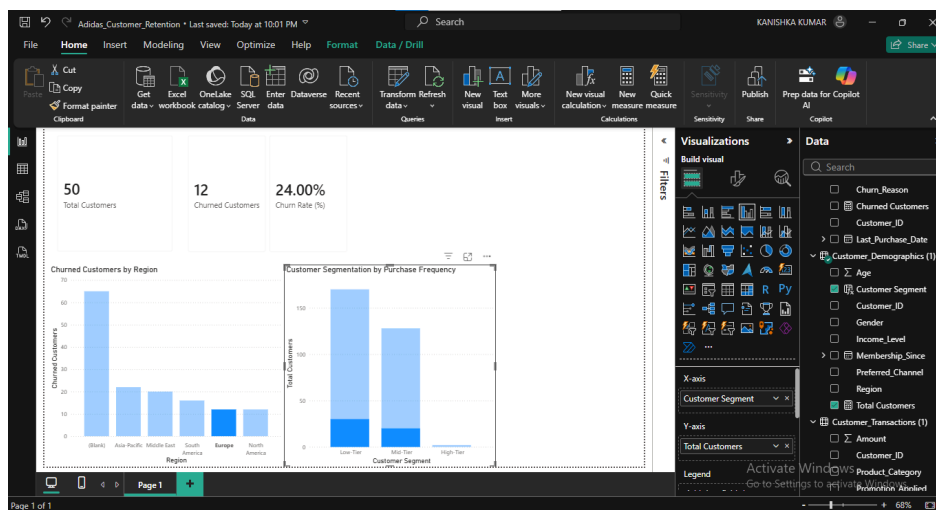
- **Avg purchase frequency by Region:**
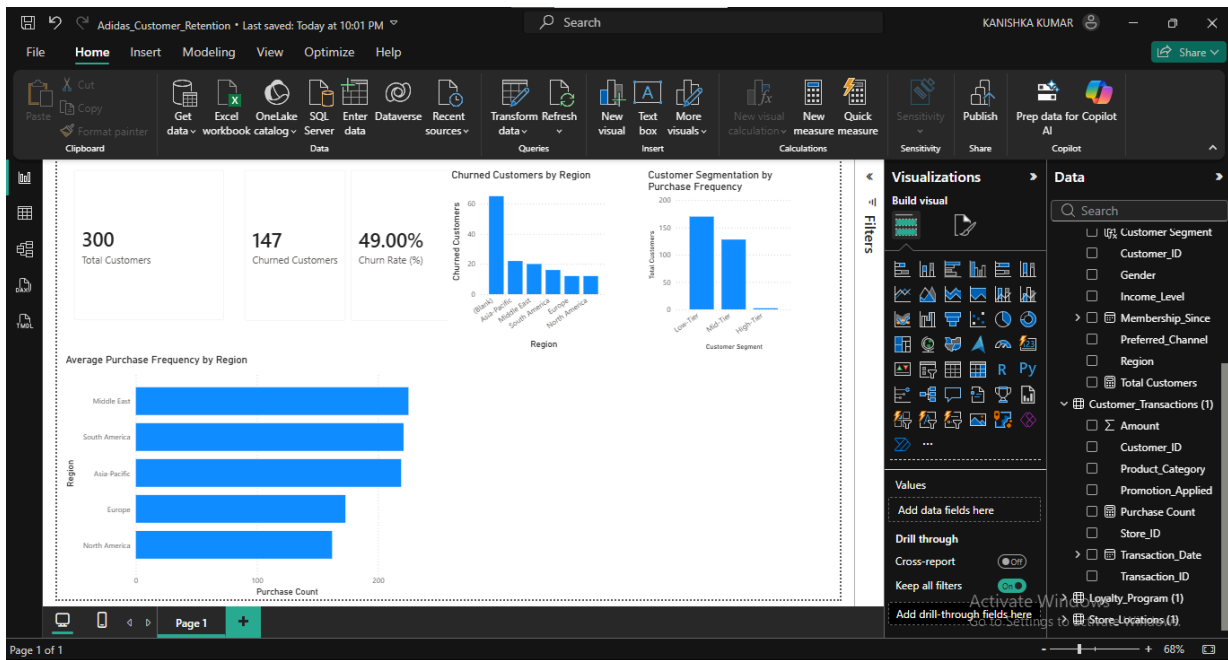
- **Avg purchase frequency by Age Group:**
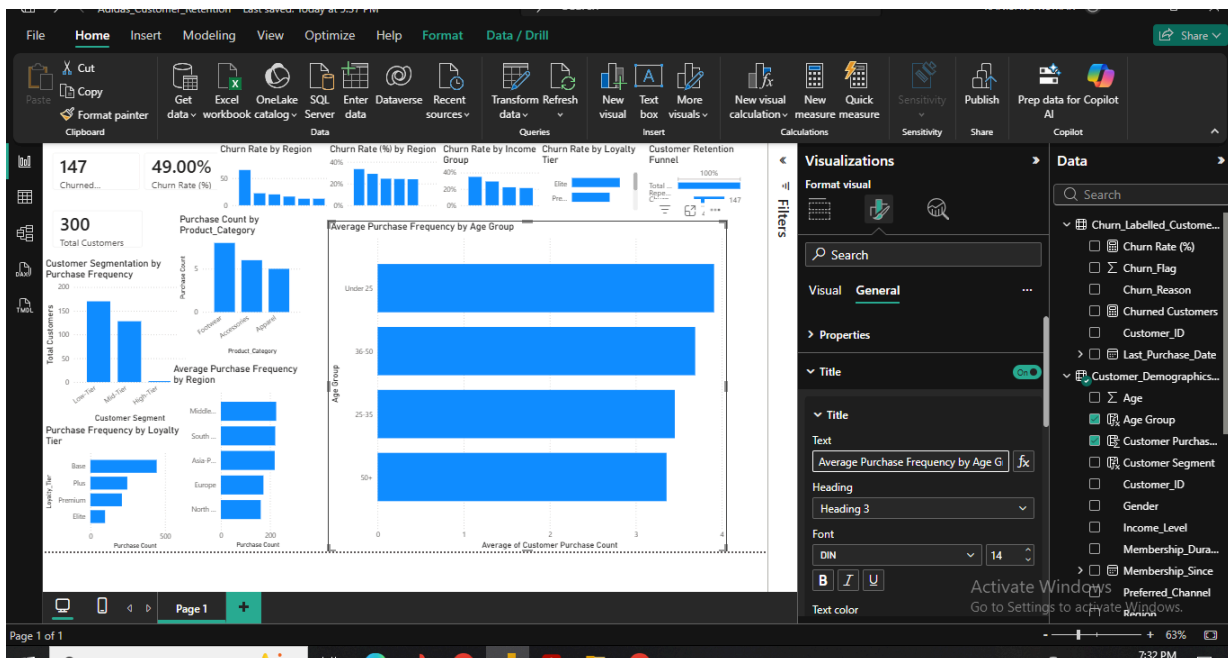
● **Avg purchase frequency by Loyalty Tier:**
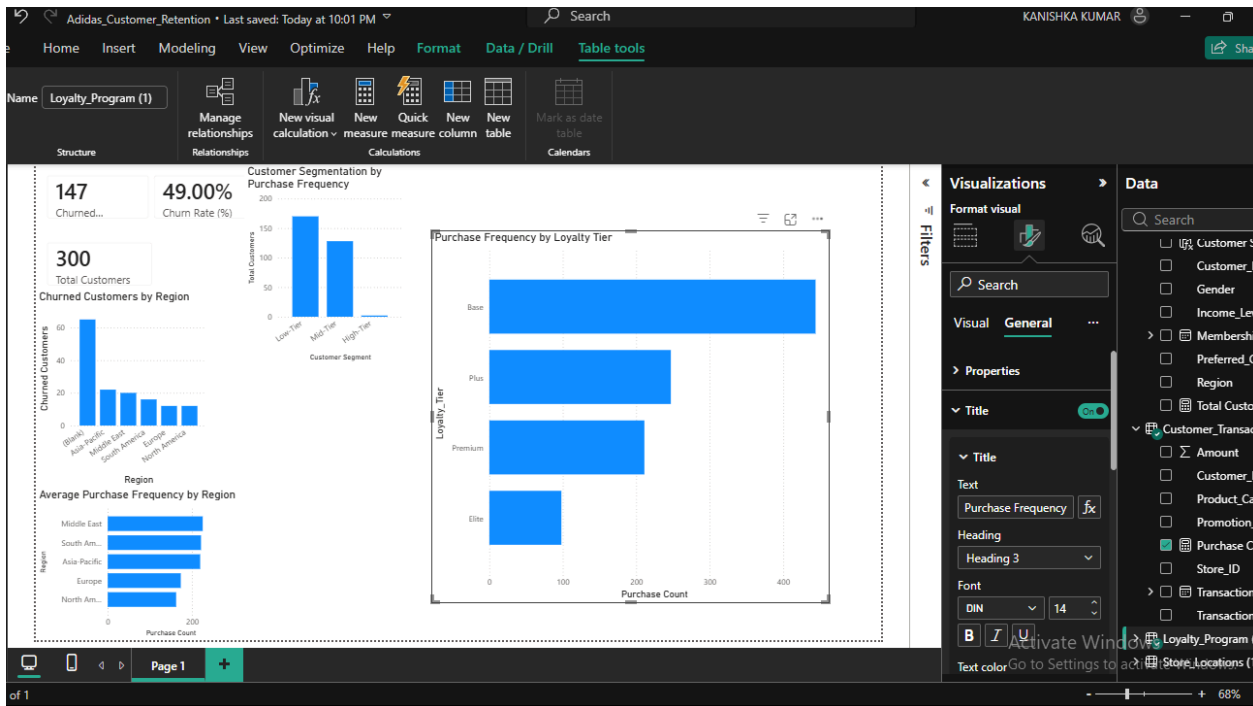
● **Product category analysis for loyal customers:**
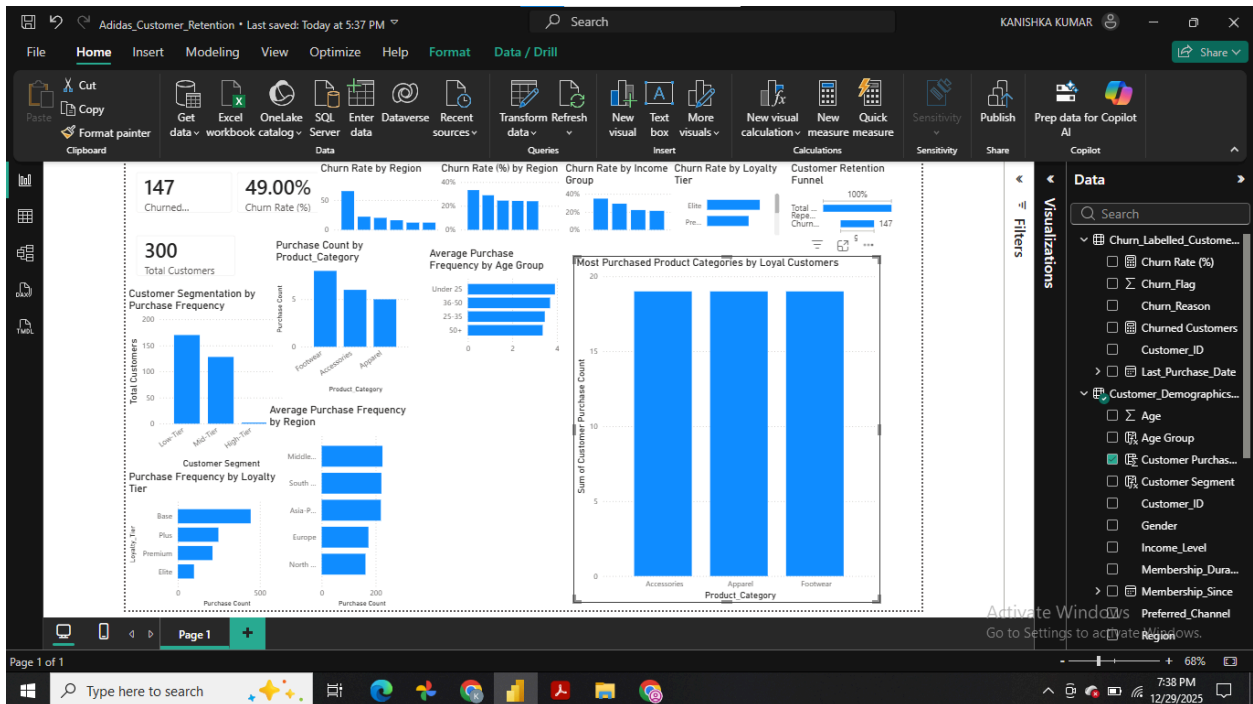
Task 4: Promotion & Loyalty Impact

Analyzed impact of promotions and loyalty tiers on purchasing behavior and churn.

● **Promotion vs Non-promotion purchase comparison:**
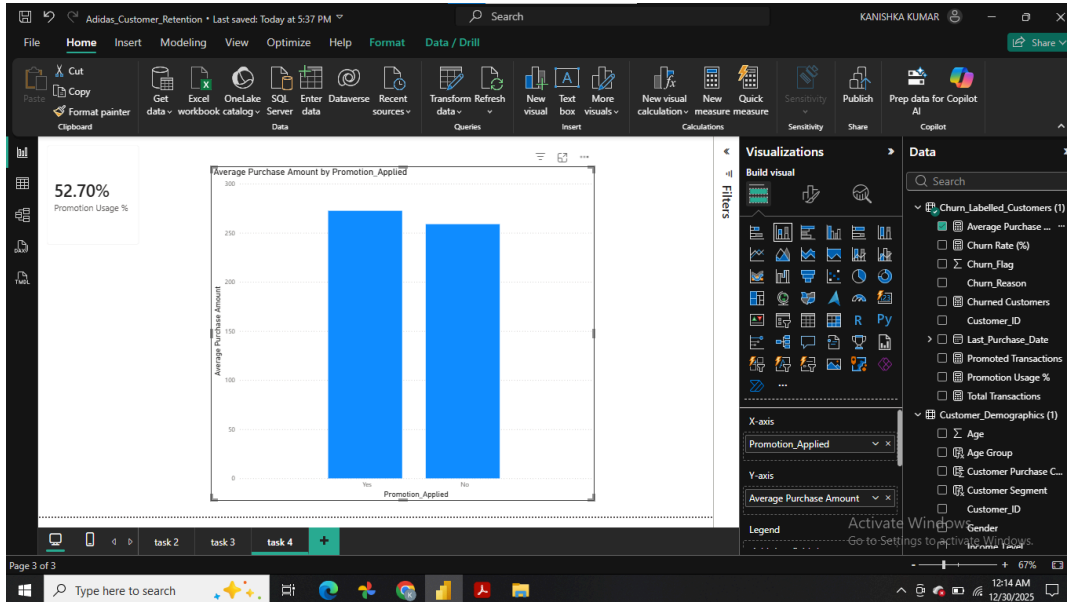
● **Churn rate across loyalty tiers:**
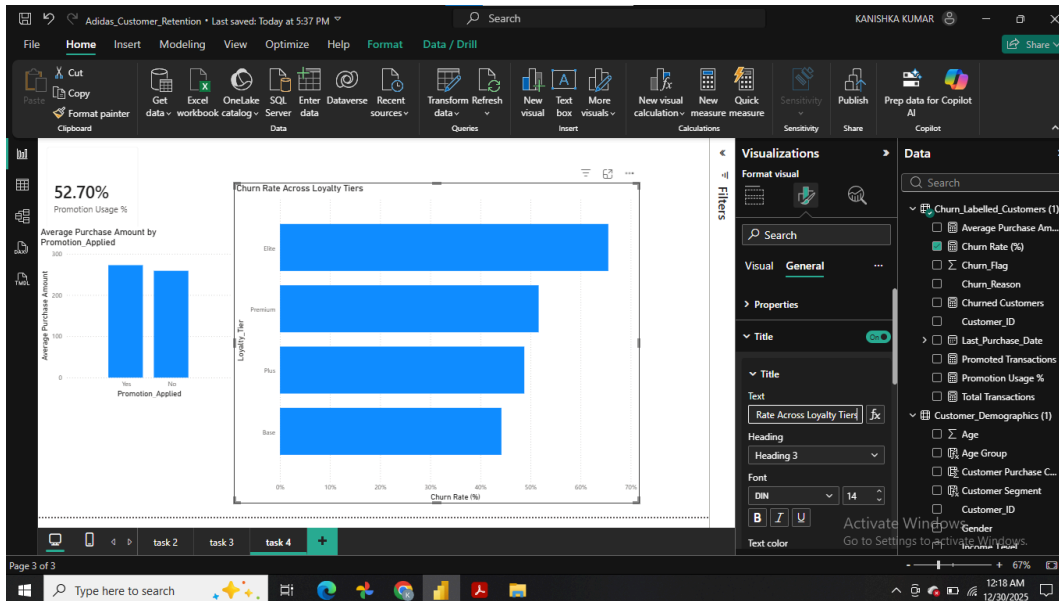
- **Points earned vs redeemed:**
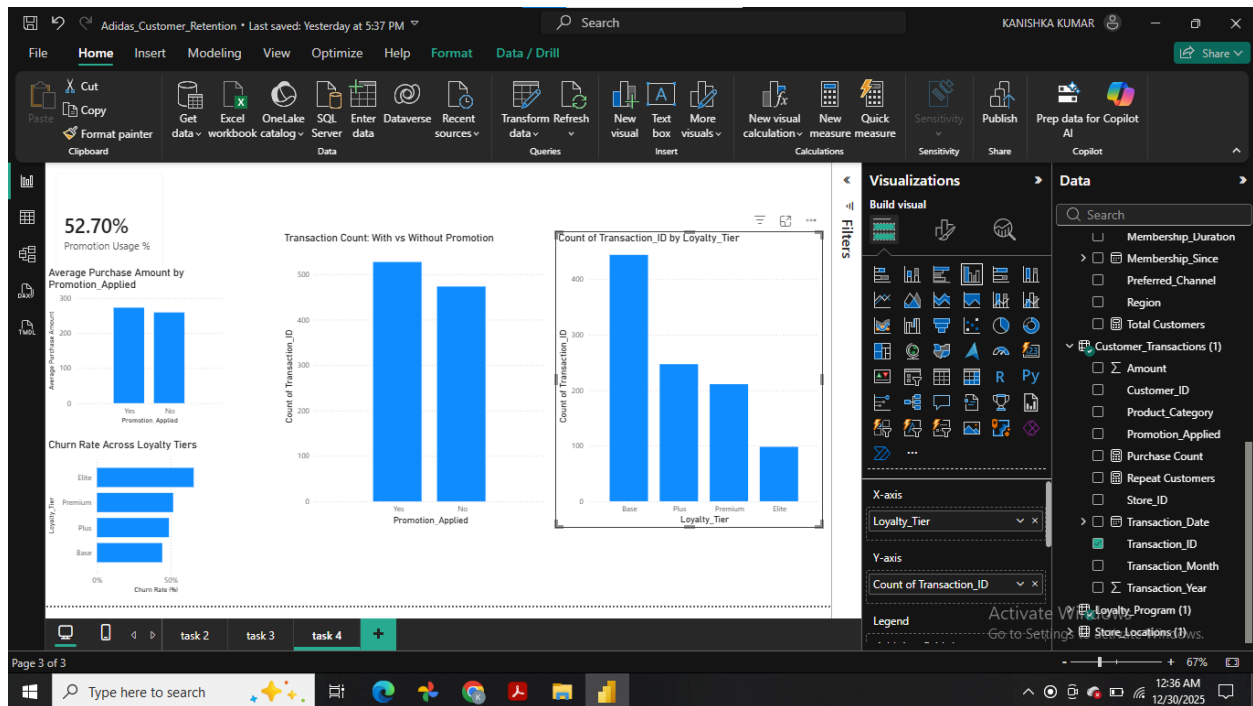
Data Limitation Note:
The provided dataset does not include transaction monetary values or loyalty points earned/redeemed. Therefore, transaction count was used as a proxy metric to assess the impact of promotions and loyalty tiers on customer engagement.

Recommendations to Improve Redemption & Retention

- Increase targeted promotions for low- and mid-tier customers.

- Simplify point redemption rules and improve visibility.

- Introduce exclusive rewards for high-tier customers to reduce churn.

- Use personalized promotions for non-promoted transactions.

- Encourage point redemption through limited-time offers.

Task 5: Store & Channel Performance

Visual 1:

This visual compares the average transaction amount across different store types (e.g., Online, Physical, Outlet). It highlights which store formats generate higher spending per transaction and provides insight into customer purchasing behavior by store environment.
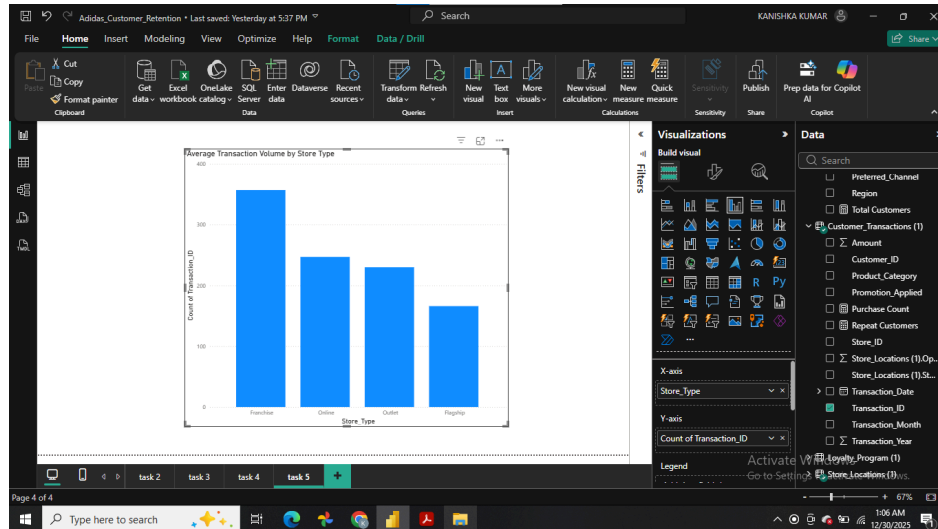
Visual 2:

This chart illustrates churn rates segmented by store type, helping to identify which store formats retain customers better over time.
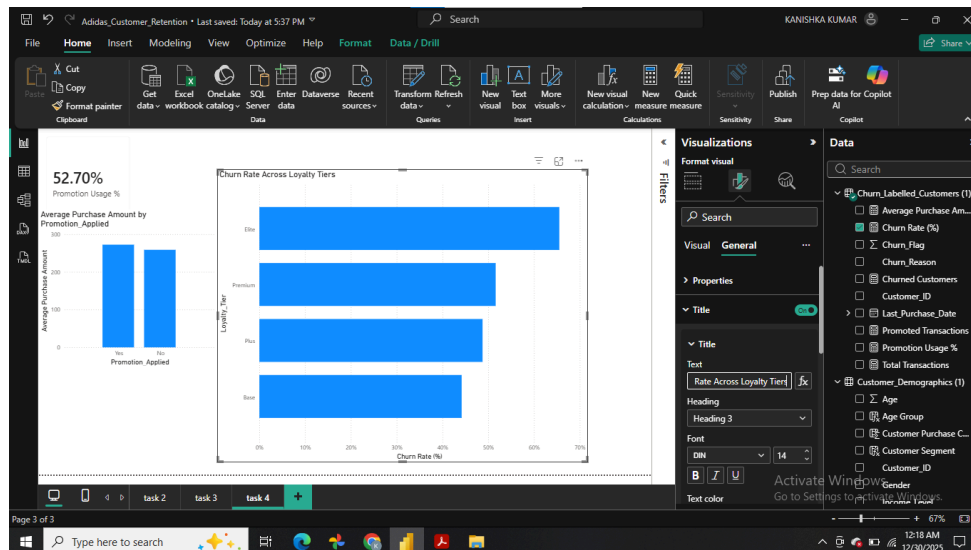
Visual 3:

This visual explores whether newer or older stores have different retention patterns, analyzing the relationship between store opening year and customer churn/retention rates.
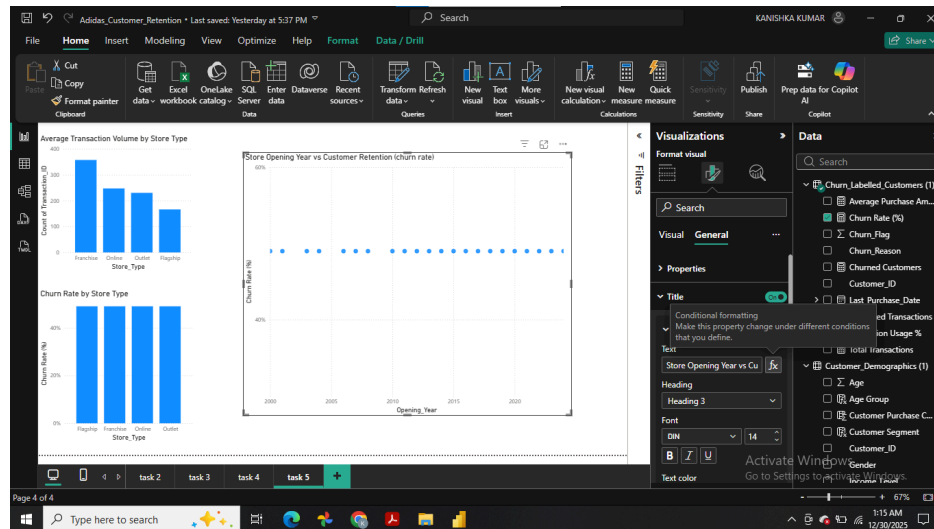
Key Insights:

- Physical stores demonstrate stronger customer retention than online channels, indicating higher engagement through in-store experiences.
- Older store types show better retention performance, suggesting increased brand trust and customer familiarity over time.
- Certain store categories exhibit higher churn rates, highlighting opportunities for targeted engagement and channel-specific retention strategies.

Data Limitation Note:

The dataset does not contain a direct transaction amount, so purchase count and available aggregated measures were used as proxies for transaction value. Store opening year is static and does not account for operational changes over time. Churn is derived from a predefined flag and may not reflect temporary customer inactivity.

Task 6: Customer Lifetime Value (CLV) Analysis

To calculate Customer Lifetime Value (CLV), segment customers by value, and analyze their purchasing behavior and recency.

CLV Formula Used:

CLV = Total Amount Spent / Membership Duration (Years)

Visual 1:

This scatter or column visual compares customer lifetime value against the number of days since their last purchase, identifying at-risk high-value customers.
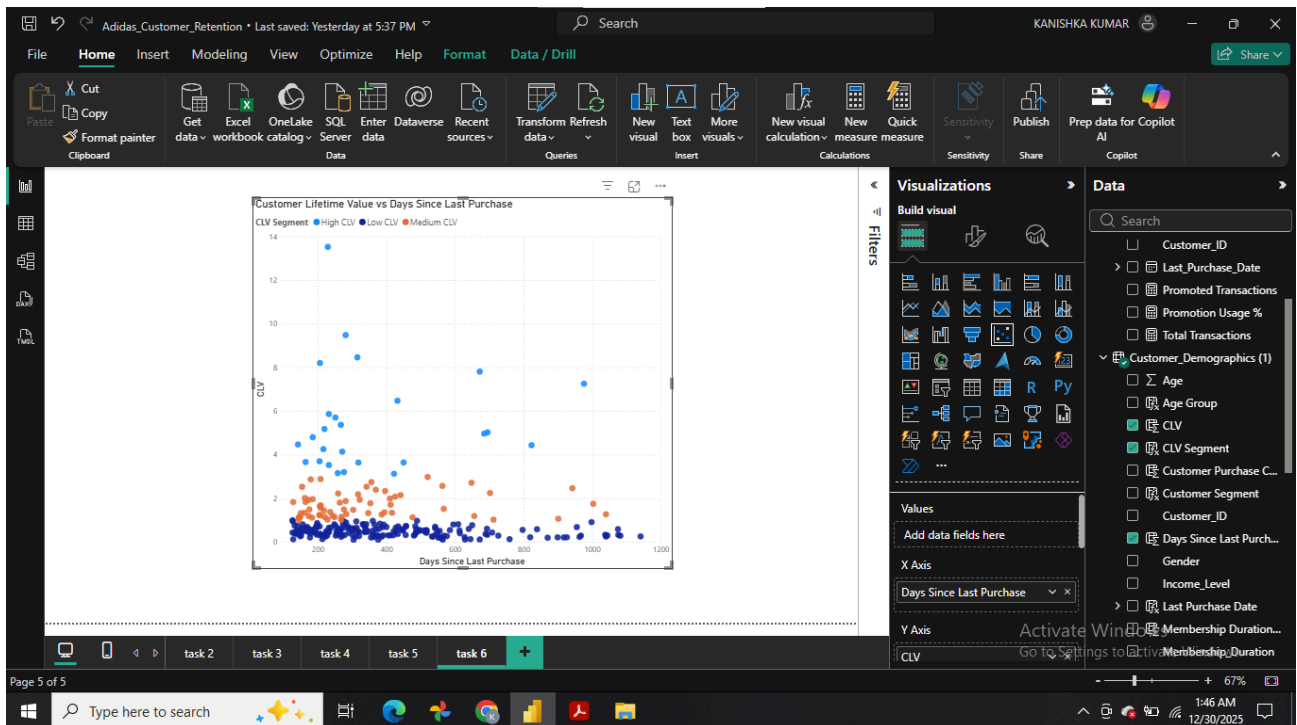
Visual 2:
This chart shows how CLV varies across loyalty tiers such as Base, Plus, Premium, and Elite.

Visual 3:
This visual compares average CLV across regions to identify high-value geographic markets.

Key Insights:

- Higher loyalty tiers exhibit significantly greater Customer Lifetime Value (CLV), confirming the effectiveness of loyalty programs in driving long-term customer value.
- Customers with high CLV but longer periods since their last purchase represent critical retention opportunities and should be prioritized for re-engagement.
- Certain regions demonstrate consistently higher average CLV, indicating stronger long-term customer engagement and spending potential.
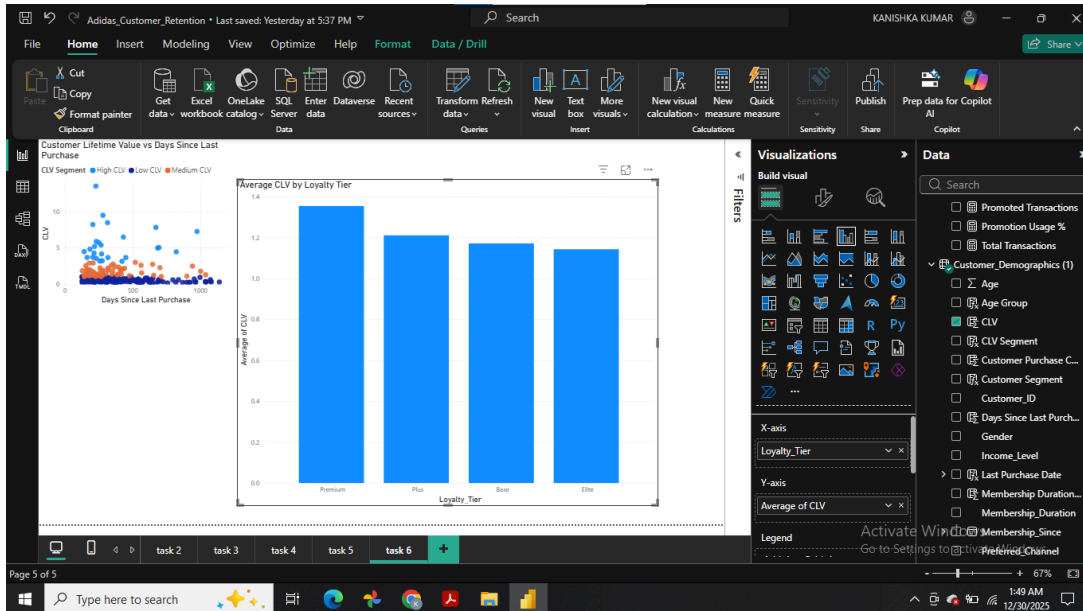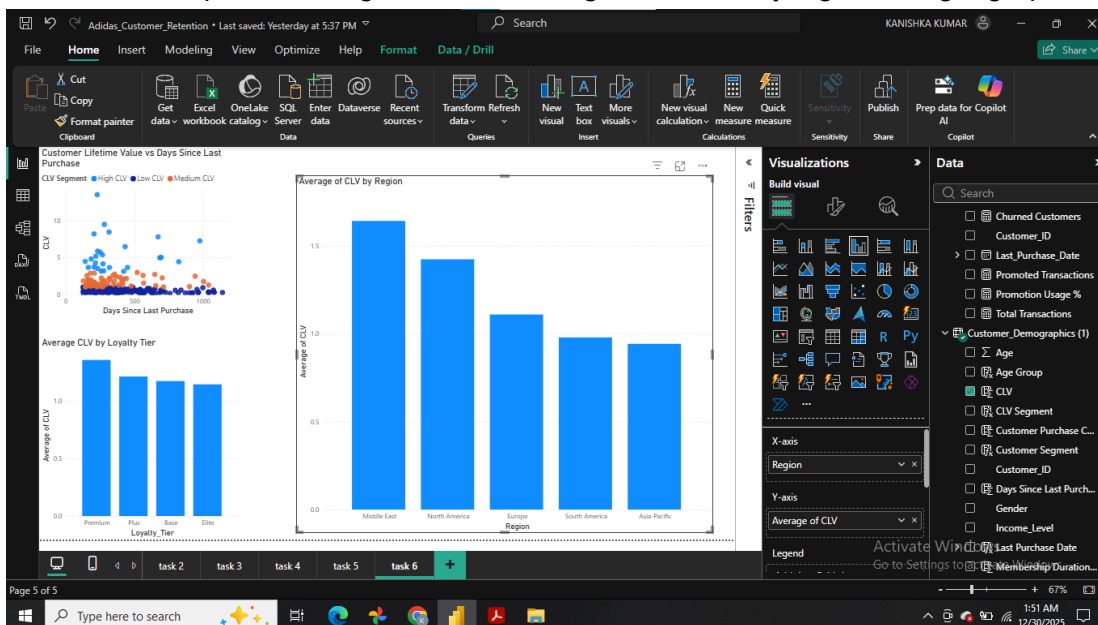
Data Limitation Note:
CLV is calculated using aggregated purchase metrics due to the absence of detailed transaction-level spending data.Membership duration and last purchase timing are based on available date fields and may not fully capture recent or offline transactions.

Task 7: Customer Lifetime Value (CLV) Analysis

Page 1: Executive KPIs

KPIs Displayed:
Total Customers, Churn Rate (%), Repeat Customer Rate (%) and Average CLV
This page provides a high-level overview of customer retention and value metrics, enabling quick executive decision-making.
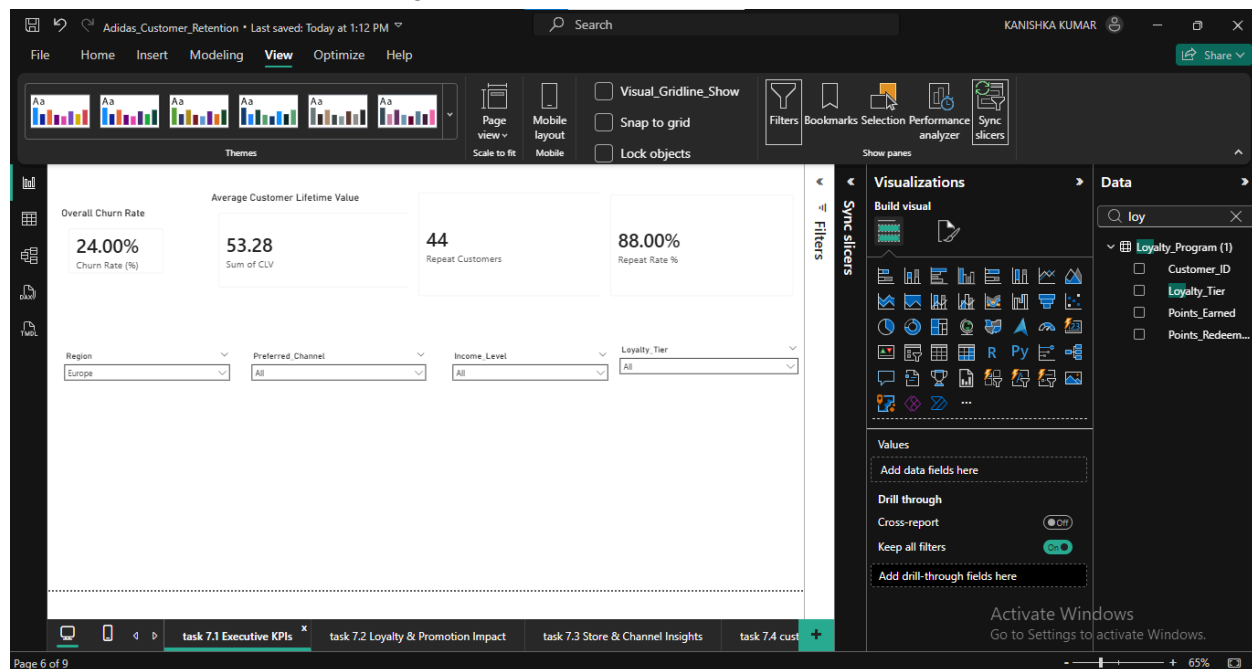
Page 2: Loyalty & Promotion Impact

Visuals Included:

Promotion usage percentage, Average purchase comparison (with vs without promotion) and Churn rate by loyalty tier.

Page 3: Store & Channel Insights

Visuals Included: Avg transaction amount by store type and Churn by store/channel

Page 4: Customer Segmentation

Segments Included: Churned Customers, Repeat Customers and High-CLV Customers

This page allows dynamic segmentation using slicers, helping business users identify priority customer groups for marketing and retention efforts.
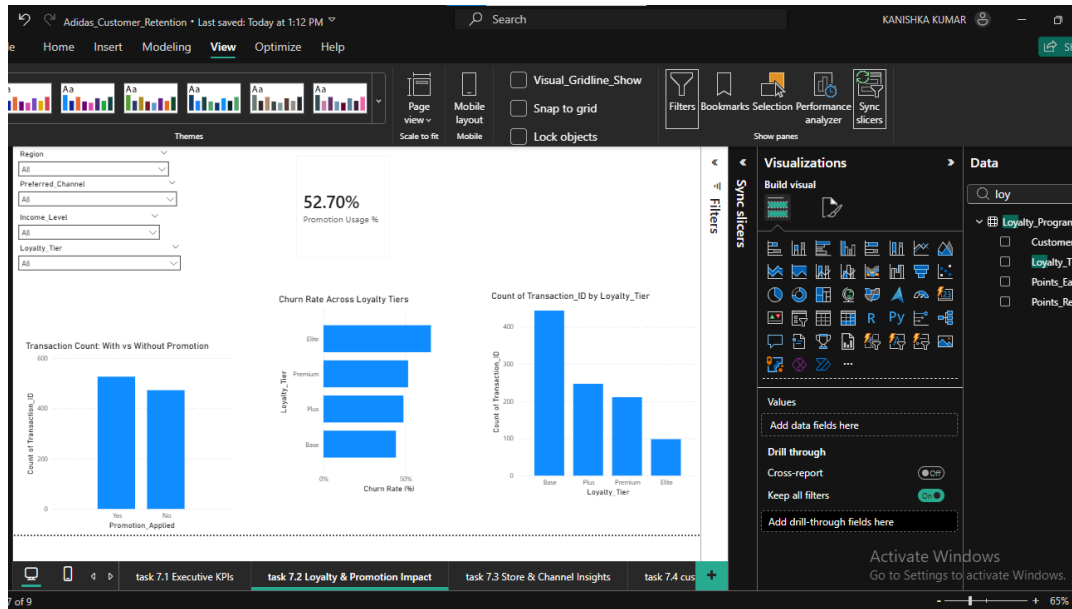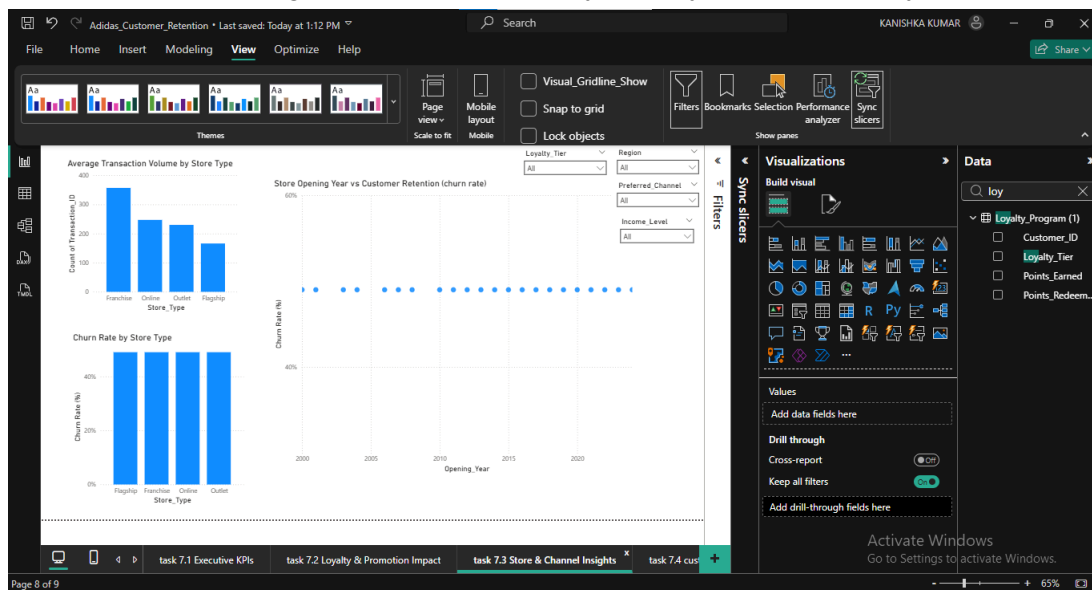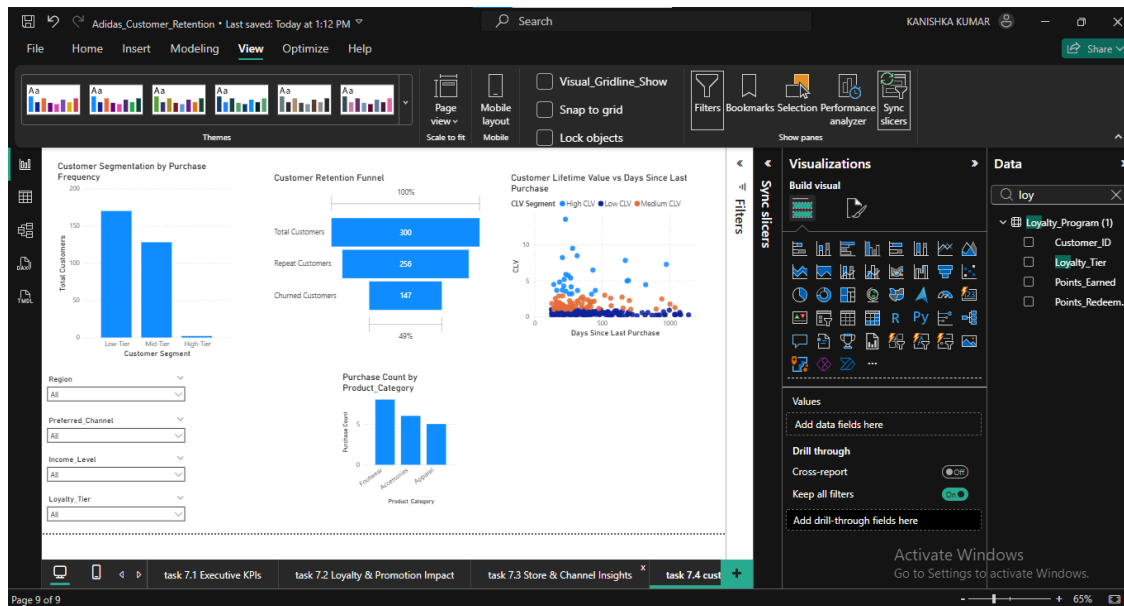

Key Insights:

- Executive KPIs indicate a high repeat customer rate, highlighting strong customer engagement and overall brand loyalty.
- Loyalty tier segmentation shows lower churn and higher lifetime value among premium customers, reinforcing the importance of loyalty-driven retention strategies.
- Channel and store analysis reveals underperforming segments with higher churn, presenting opportunities for targeted operational and marketing improvements.

Data Limitations Note:

- Dashboard insights are derived from aggregated data and may not capture individual transaction-level behavior.
- Promotion and loyalty analyses are constrained by the absence of detailed reward redemption and discount depth information.
- Churn classification is based on available labeling and may not distinguish between permanent churn and temporary inactivity.

Task 8: Video explanation: Expressing the finding and actionable insights

Video Link: 📖 **Adidas_Customer_Retention_Analytics_Report - Google Docs - Google Chr…**

Conclusion & Recommendations

This project analyzed Adidas' customer retention, loyalty behavior, and lifetime value using Power BI. Through churn analysis, repeat purchase segmentation, store and channel performance evaluation, and CLV modeling, key drivers of customer engagement were identified. The insights highlight the importance of loyalty programs, repeat purchase behavior, and targeted channel strategies in improving customer retention. Overall, the dashboard provides actionable, data-driven insights to support strategic decision-making and customer-centric growth initiatives.

Key Recommendations for Adidas

- Prioritize retention efforts for high-CLV repeat customers, especially those in premium and elite loyalty tiers showing declining activity.

- Strengthen loyalty program engagement by simplifying point redemption and offering personalized, tier-based incentives.

- Improve underperforming channels and store types by enhancing customer experience, targeted promotions, and post-purchase engagement strategies.

Note: The analysis is limited by the absence of detailed transaction-level monetary data and promotion depth information. Churn classification is based on predefined labels and may not fully capture temporary inactivity. Therefore, insights should be interpreted as indicative rather than absolute.

Tools & Technologies Used

- Microsoft Power BI
- Power Query for data cleaning and transformation
- DAX for calculated measures and KPIs
- Microsoft Excel (source datasets)