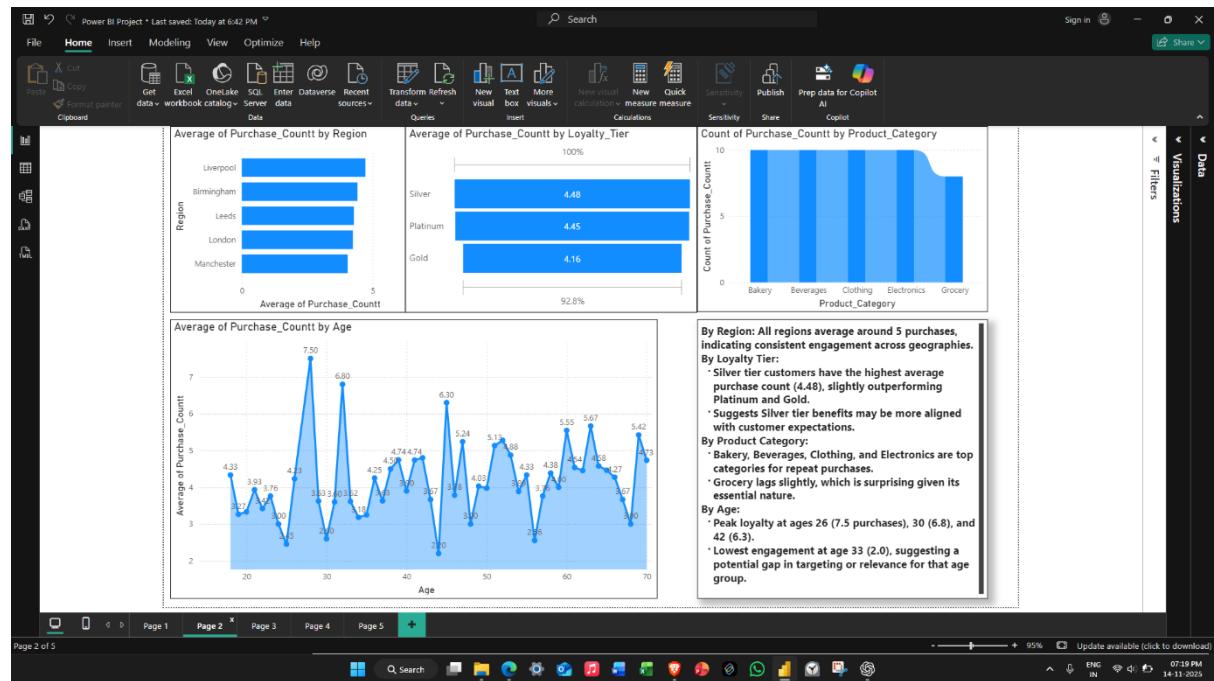


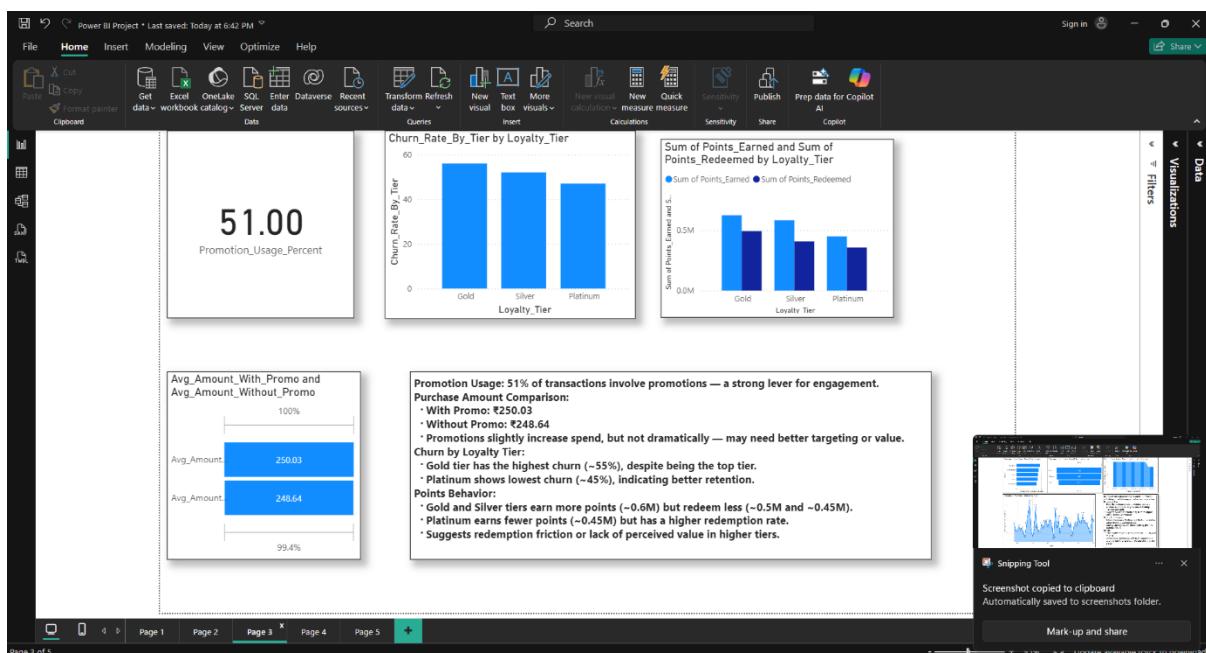
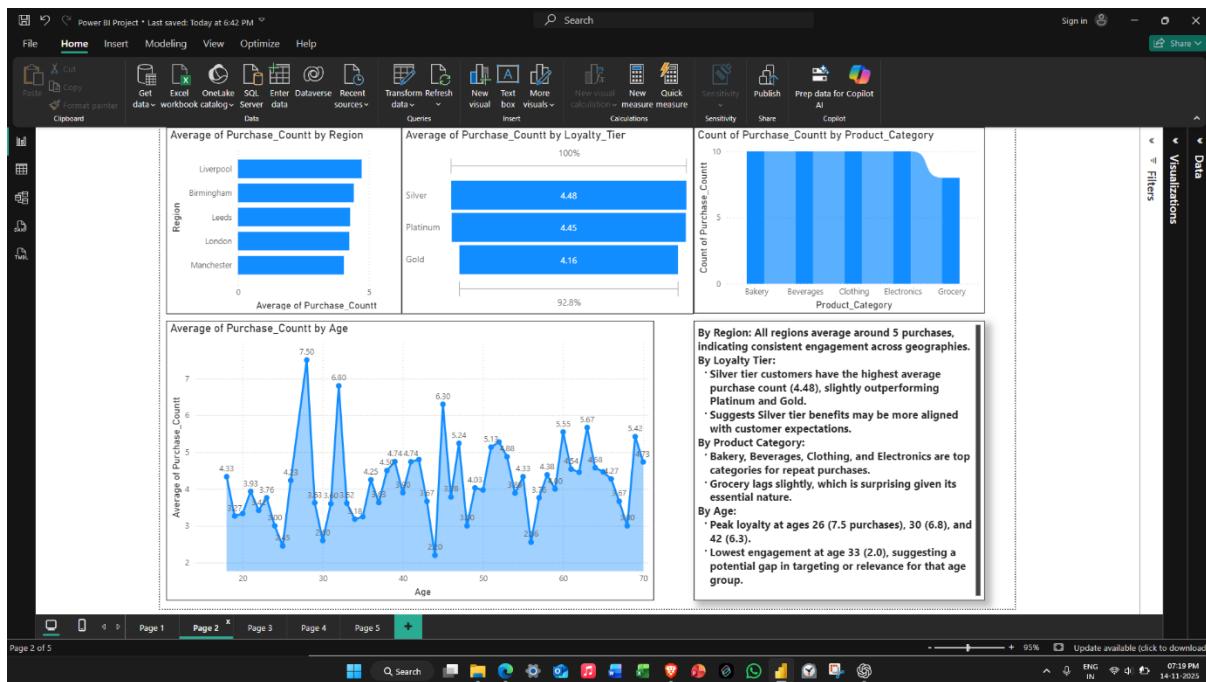
Retail Customer Retention Analytics – TESCO

Project Objective: Develop a robust, Interactive Customer Retention Analytics Dashboard in Power BI using the provided data, which will:

- Consolidate customer demographics, transaction history, store performance, and loyalty program usage.
- Enable dynamic segmentation of high-value, repeat, and churned customers.
- Offer actionable insights for improving retention, loyalty program effectiveness, and regional store strategies.

Visualization and Inference and key insights:-





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Visualizations

Avg_Transaction_Amount by Store_ID
274.91

Churn Rate (%) by Store_ID
45.9

Corr_OpeningYear_ChurnRate
0.23

Avg_Transaction_Amount by Store_Type
Store_Type Express Superstore

Region	Store_Type	Avg_Transaction_Amount	Churn Rate (%)	Total
Birmingham	Express	252.77	50.3	259.82
Leeds	Express	252.11	47.6	252.11
London	Superstore	230.17	53.3	242.90
Manchester	Superstore	269.99	57.3	274.91
Total	Superstore	244.72	52.5	256.58

Churn Rate (%) by Region
Region: London, Manchester, Birmingham, Leeds

Churn_Rate_By_Store by Opening_Year
Opening Year: 0.46, 0.48, 0.50, 0.52, 0.54

Table:
Avg_Transaction_Amount by Store: 274.91 — relatively high, indicating strong basket value.
Churn Rate by Store: 45.9% — slightly better than overall average.
By Store Type:
- Express stores have lower transaction amounts and higher churn.
- Superstores perform better in both metrics.
By Region:
- Manchester has the highest churn (57.3%) in Express stores.
- London shows consistently high churn across both store types (~43.3%).
Correlation with Opening Year: Weak positive correlation (0.23) between store age and churn — older stores may need refresh or re-engagement strategies.
Table:
- Leeds only has Express stores, with moderate churn (47.6%).
- Manchester's Superstore churn is lowest (45.9%) despite high Express churn — suggests store type matters.

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Key Findings

¹ Churn Risk Concentration
 - High-income customers and regions like Liverpool and Birmingham show the highest churn.
 - Express stores consistently underperform in retention compared to Superstores.

² Loyalty Behavior & Repeat Purchases
 - Silver tier customers are the most engaged, with the highest average purchase count.
 - Ages 26, 30, and 42 show peak loyalty; age 33 is a loyalty dip.
 - Bakery, Beverages, Clothing, and Electronics are top categories among repeat buyers.

³ Promotion & Points Effectiveness
 - Promotions are used in 51% of transactions but only marginally increase spend.
 - Gold tier shows highest churn despite earning the most points — redemption gap suggests disengagement.
 - Platinum tier has the lowest churn and highest redemption efficiency.

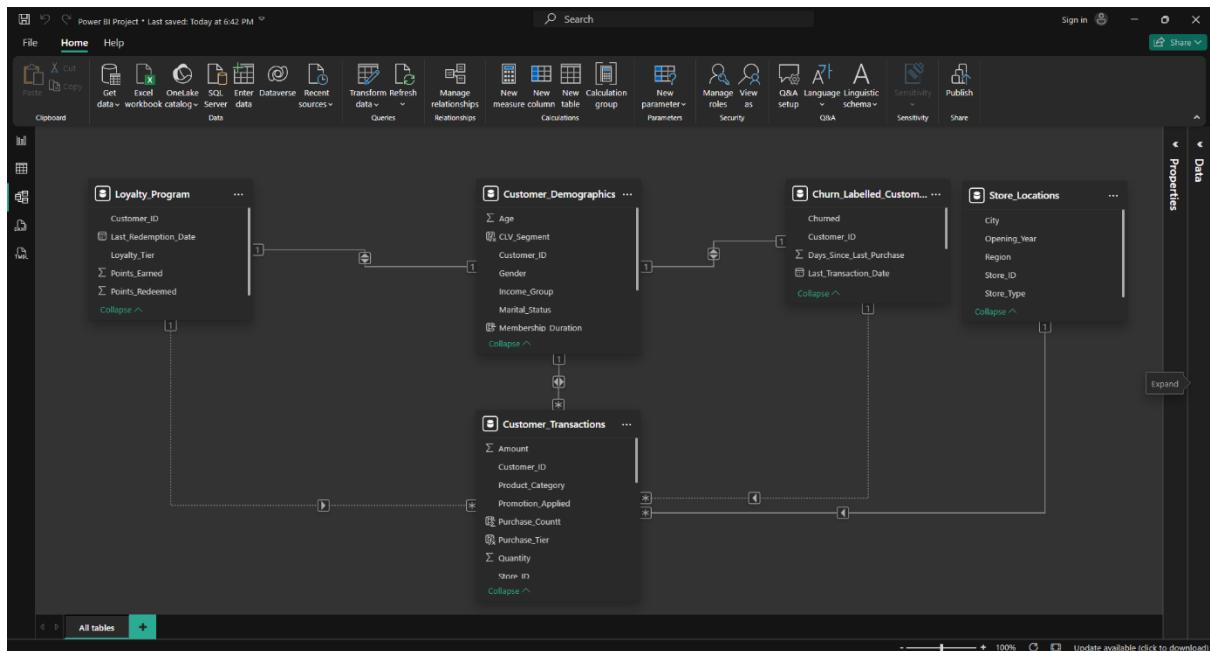
⁴ Store-Level Retention Patterns
 - Manchester's Superstore has the lowest churn (45.9%) and highest transaction value.
 - Older stores show slightly higher churn (correlation = 0.23), indicating aging infrastructure or outdated experiences.

Top 3 Recommendations

- 1 Target High-Churn Segments
 - Launch re-engagement campaigns in Liverpool and Birmingham, especially for high-income and Gold-tier customers.
- 2 Optimize Loyalty Program
 - Revamp Gold tier benefits to boost redemption and reduce churn.
 - Promote Silver-tier features that drive repeat purchases.
- 3 Store-Specific Retention Strategy
 - Focus campaigns on Express stores and older outlets with high churn.
 - Leverage high-performing Superstores (e.g., Manchester) as benchmarks for best practices.

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Model View:-



Measures and Calculation in DAX:-

```

1 Churn Rate (%) =
2 VAR TotalCustomers = COUNTROWS('Churn_Labelled_Customers')
3 VAR ChurnedCustomers =
4     CALCULATE(
5         COUNTROWS('Churn_Labelled_Customers'),
6         'Churn_Labelled_Customers'[Churned] = "Yes"
7     )
8 RETURN
9 DIVIDE(ChurnedCustomers, TotalCustomers, 0) * 100
10

```

```

1 Churn_Rate_By_Tier =
2 CALCULATE(
3     COUNTROWS(Churn_Labelled_Customers),
4     Churn_Labelled_Customers[Churned] = "Yes"
5 )

```

```

1 Measure1 = DISTINCTCOUNT(Churn_Labelled_Customers[Customer_ID])

```

```

1 CLV =
2 CALCULATE(
3     DIVIDE(
4         [Total_Amount_Spent],
5         MAX(Customer_Demographics[Membership_Duration]),
6         0
7     )
8 )

```

```

1 CLV_Segment =
2 VAR CLV_Value = [CLV]
3 VAR Q1 = PERCENTILEX.INC(ALL(Customer_Demographics), [CLV], 0.25)
4 VAR Q3 = PERCENTILEX.INC(ALL(Customer_Demographics), [CLV], 0.75)
5 RETURN
6 SWITCH(
7     TRUE(),
8     CLV_Value <= Q1, "Low",
9     CLV_Value <= Q3, "Medium",
10    "High"
11 )

```

```

1 Avg_Amount_With_Promo =
2 CALCULATE(
3     AVERAGE(Customer_Transactions[Amount]),
4     Customer_Transactions[PromotionApplied] = "Yes"
5 )

```

```

1 Avg_Amount_Without_Promo =
2 CALCULATE(
3     AVERAGE(Customer_Transactions[Amount]),
4     Customer_Transactions[PromotionApplied] = "No"
5 )

```

```

1 Avg_Days_Since_Last =
2 AVERAGEX(
3     VALUES(Customer_Transactions[CustomerID]),
4     LOOKUPVALUE(Churn_Labelled_Customers[Days_Since_Last_Purchase], Churn_Labelled_Customers[CustomerID], Customer_Transactions[CustomerID])
5 )

```

```

1 Avg_Transaction_Amount = AVERAGE(Customer_Transactions[Amount])

```

```

1 Churn_Rate_By_Store =
2 VAR CustomersAtStore = DISTINCTCOUNT(Customer_Transactions[CustomerID])
3 VAR ChurnedAtStore =
4     CALCULATE(
5         DISTINCTCOUNT(Churn_Labelled_Customers[CustomerID]),
6         TREATAS(VALUES(Customer_Transactions[CustomerID]), Churn_Labelled_Customers[CustomerID]),
7         Churn_Labelled_Customers[Churned] = "Yes"
8     )
9 RETURN
10 IF( CustomersAtStore = 0, BLANK(), DIVIDE(ChurnedAtStore, CustomersAtStore, 0) )

```

```

1 Churned_Customers =
2 CALCULATE(
3     DISTINCTCOUNT(Churn_Labelled_Customers[Customer_ID]),
4     Churn_Labelled_Customers[Churned] = "Yes"
5 )

```

```

1 Corr_OpeningYear_ChurnRate =
2 VAR tbl =
3     SUMMARIZE(
4         Store_Locations,
5         Store_Locations[Store_ID],
6         "OpeningYear", MIN(Store_Locations[Opening_Year]),
7         "ChurnRate", CALCULATE([Churn_Rate_By_Store], TREATAS({Store_Locations[Store_ID]}, Customer_Transactions[Store_ID]))
8     )
9 VAR MeanX = AVERAGEX(tbl, [OpeningYear])
10 VAR MeanY = AVERAGEX(tbl, [ChurnRate])
11 VAR Num = SUMX(tbl, ([OpeningYear]-MeanX)*([ChurnRate]-MeanY))
12 VAR Den = SQRT( SUMX(tbl, ([OpeningYear]-MeanX)^2) * SUMX(tbl, ([ChurnRate]-MeanY)^2) )
13 RETURN
14 IF(Den = 0, BLANK(), Num/Den)

```

```

1 Customer_Purchase_Count =
2 CALCULATE(
3     COUNT(Customer_Transactions[Transaction_ID]),
4     ALLEXCEPT(Customer_Transactions, Customer_Transactions[Customer_ID])
5 )

```

```

1 Customers_Count = DISTINCTCOUNT(Customer_Transactions[Customer_ID])

```

```

1 Measure2 = DISTINCTCOUNT(Customer_Transactions[Customer_ID])

```

```

1 Promotion_Usage_Percent =
2 DIVIDE(
3     CALCULATE(COUNTROWS(Customer_Transactions), Customer_Transactions[Promotion_Applied] = "Yes"),
4     COUNTROWS(Customer_Transactions)
5 ) * 100

```

```

1 Purchase_Count =
2 CALCULATE(
3     COUNT(Customer_Transactions[Transaction_ID]),
4     ALLEXCEPT(Customer_Transactions, Customer_Transactions[Customer_ID])
5 )

```

```

1 Total_Amount_Spent =
2 CALCULATE(
3     SUM(Customer_Transactions[Amount]),
4     ALLEXCEPT(Customer_Transactions, Customer_Transactions[Customer_ID])
5 )

```

```

1 Total_Transactions = COUNTROWS(Customer_Transactions)

```

Video Link :- <https://www.loom.com/share/2d9d344fe32e4c5abb09cd68b3a6f3f6>