SHOPPING TRENDS AND CUSTOMER BEHAVIOUR-SQL &POWERBI

Tools Used:

- **SQL** – for data cleaning (missing values, filtered age/purchase ranges, standardized strings)
- **Power BI** – for data modeling, DAX, drillthrough analysis, tooltips, and interactive dashboards

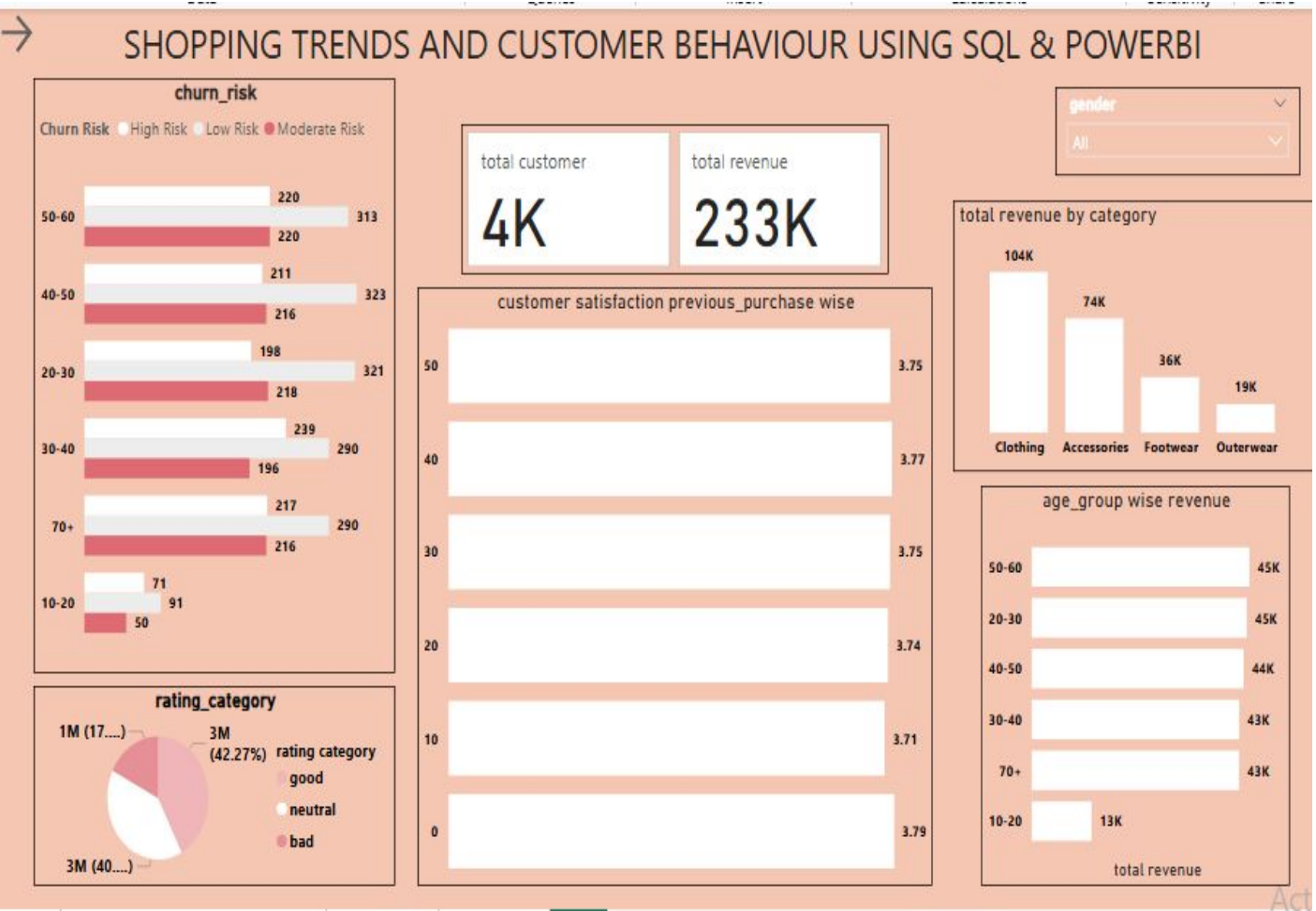
Project Goal:

To understand how customers behave across product categories, seasons, and loyalty levels — and identify churn risks, satisfaction drivers, and promotional engagement.

Key Features:

- Custom **DAX measures** for churn risk, age groups, average rating, and previous purchases
- **Drillthrough pages** for category-level insights
- **Tooltip visuals** for detailed hover analysis
- Cleaned and filtered raw data in SQL, then exported to Power BI

Main dashboard-Overview



Shows churn risk by age & frequency of purchases

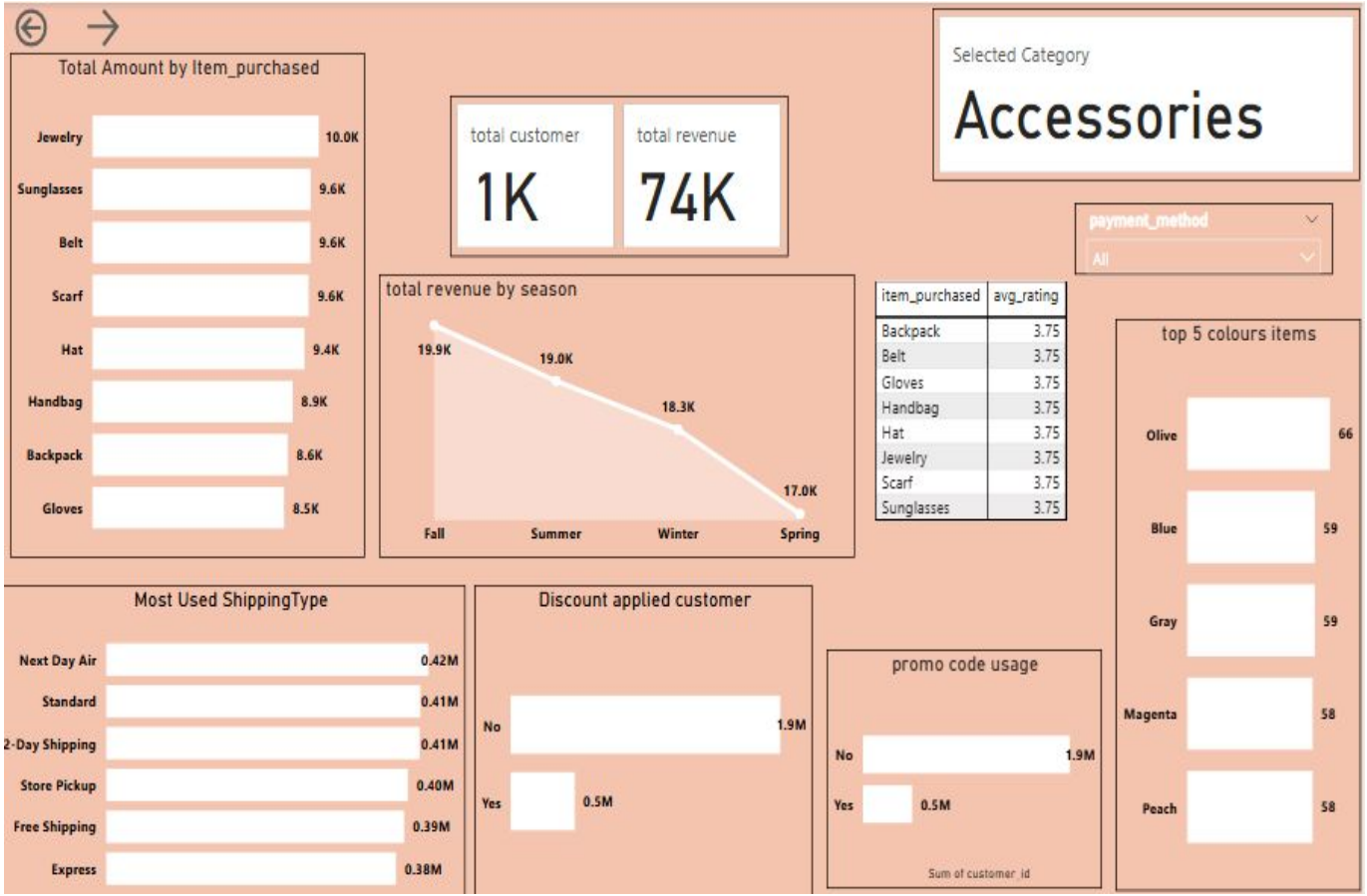
Drillthrough enabled for category deep dive

Highlights top-performing product categories

Analyzes average review ratings & previous purchase

Enabled slices for gender

Category-drillthrough



Each Category deep dive through drillthrough

Analyzing revenue by item purchase & season

Each category items rating ,Colour analyzed

Performed analyzation for Shipping type,discount and promo usage

Business Insights

BUSINESS TAKEAWAY:

Customer Behavior & Retention

- **High churn customers** can be converted into **moderate churn** — especially those with strong purchase history.
- Customers with **more previous purchases** give **better average ratings** (~3.75) — target them with loyalty offers and retention strategies.
- **Young adults, adults, and teens** contribute the most to revenue — focus marketing campaigns on these demographics.

Clothing Insights

- The **clothing category** generates the **highest revenue** overall.
- Top-performing items include **blouse, shirt, pants, dress, and sweater**.
- All products in this category have an **average review rating of 3.75**, indicating good satisfaction.
- **Spring season** drives the most clothing sales, while **summer performs the least**.
- Customers prefer **free shipping** over paid types.
- Most customers who did **not apply discounts** are also **non-subscribers** — consider bundling offers with subscription plans.
- **Most preferred colors** in clothing: ***Teal, Maroon, Black, Silver, Violet.***

Accessories Insights

Business takeaway
- Customer Behaviour & Retention
-Clothing
-Accessories
-Footwear
-Outerwear
-Business Strategies

Accessories Insights

- **Jewelry, scarf, belt, hat, sunglasses** are the top revenue-generating items in the accessories category.
- **Fall season** performs best, while **spring season** lags in this category.
- **Next Day Air** and **2-Day Shipping** are the most popular choices.
- Most customers **did not use promo codes** and were also **not subscribed** — these customers can be converted through targeted discount campaigns.
- **Top 5 color preferences**: ***Olive, Blue, Magenta, Gray, Peach.***

Footwear Insights

- **sandals, shoes, boots** are the top revenue -generating items
- **spring** season performing high while **winter** performing less
- **Top 5 color preferences**: ***olive, yellow, violet, pink, silver***

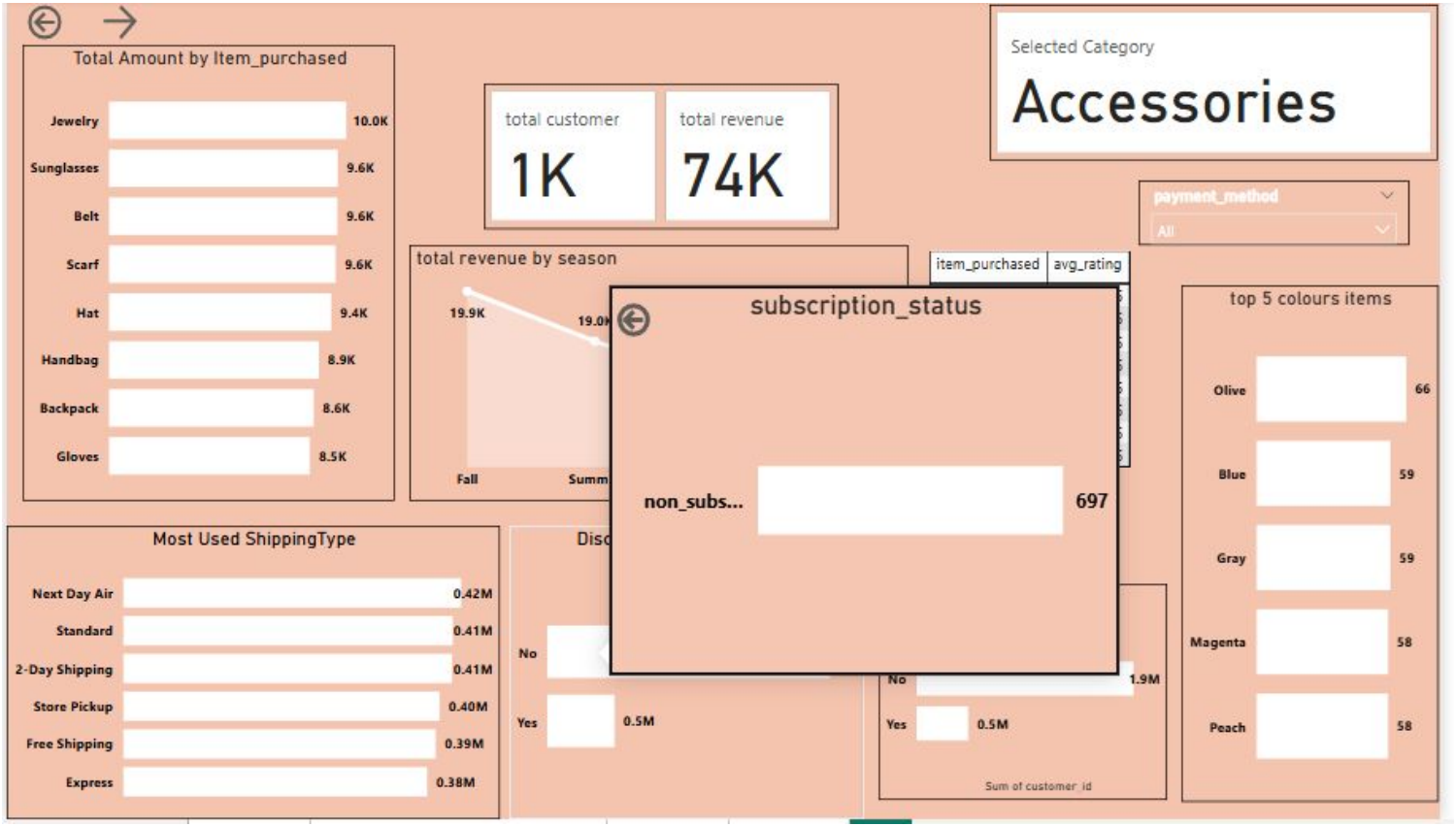
Outerwear Insights:

- **Coats , jacket** are most revenue generating
- **fall** season are most performing
- Customers prefer **free shipping** over paid types.
- **Top 5 color preferences**: ***blue , olive , cyan ,lavender , violet***

Strategic Recommendations

- Focus on **retention strategies** for customers with medium to high churn risk and high previous purchases.
- Encourage **subscription , discount** and **promo code** usage through value bundles, strategic subscription, discount targeting.
- Tailor **marketing by season and category** (e.g., promote outerwear and accessories in fall, footwear and clothing in spring).
- Create **personalized experiences** for preferred color and shipping preferences.

Tooltip



Tooltip for subscription status by discount analysis

SQL cleaning script(appendix)

```sql
CREATE TABLE cleaned_shopping_data AS
SELECT
  customer_id,
  age,
  TRIM(gender) AS gender,
  TRIM(item_purchased) AS item_purchased,
  TRIM(category) AS category,
  purchase_amount,
  TRIM(location) AS location,
  TRIM(colour) AS colour,
  TRIM(season) AS season,
  CAST(review_rating AS FLOAT) AS review_rating,
  TRIM(subscription_status) AS subscription_status,
  TRIM(shipping_type) AS shipping_type,
  TRIM(discount_applied) AS discount_applied,
  TRIM(promo_code_used) AS promo_code_used,
  previous_purchases,
  TRIM(payment_method) AS payment_method,
  TRIM(frequency_of_purchases) AS frequency_of_purchases
FROM shopping_data
WHERE
  age BETWEEN 10 AND 100
  AND purchase_amount BETWEEN 0 AND 100
  AND review_rating BETWEEN 0 AND 5
  AND customer_id IS NOT NULL
  AND gender IS NOT NULL
  AND item_purchased IS NOT NULL
  AND purchase_amount IS NOT NULL;
```

This query was used to clean the raw dataset before loading it into Power BI. Key actions: trimmed strings, filtered age/purchase/rating ranges, removed nulls, and casted data types.

THANKYOU

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