# TMDS Exam Solution

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- Faster Deployment (Python, Airflow, Docker and Power Bi)

- End-to-End Deployment. (ETL Process)

- Technical Issues: Different Operating System, Pandas / PySpark.

Thought Process (Consideration)

- Day 1.
    - Creating Data Pipelines.
    - Creating Workflow. (Fixing Technical Issues)
- Day 2.
    - Creating Dashboards using Power-Bi.
    - Understanding the data at a macro.
- Day 3.
    - Further explorations using Python.
    - Understanding the further the data.
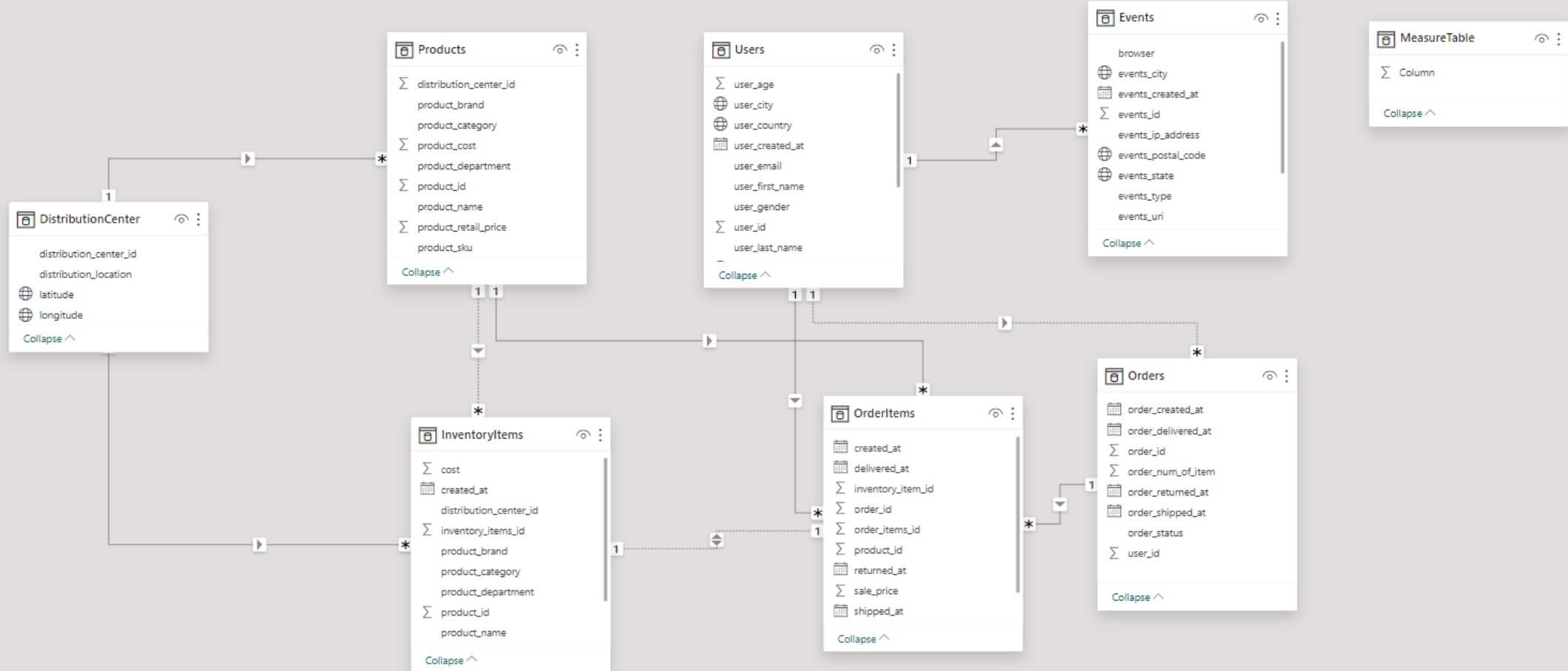
Process Overview
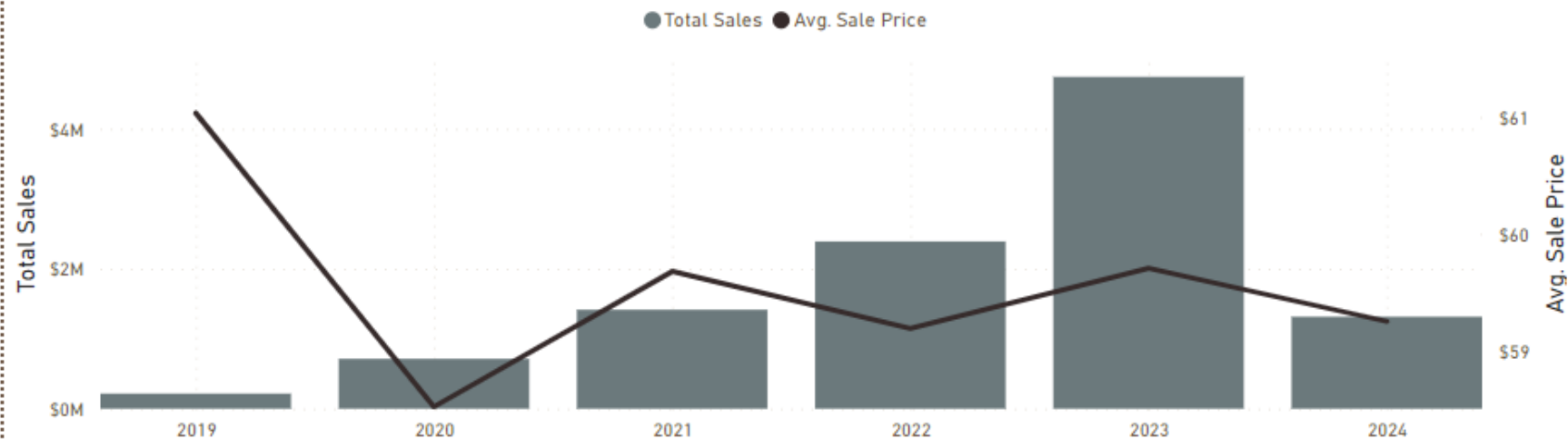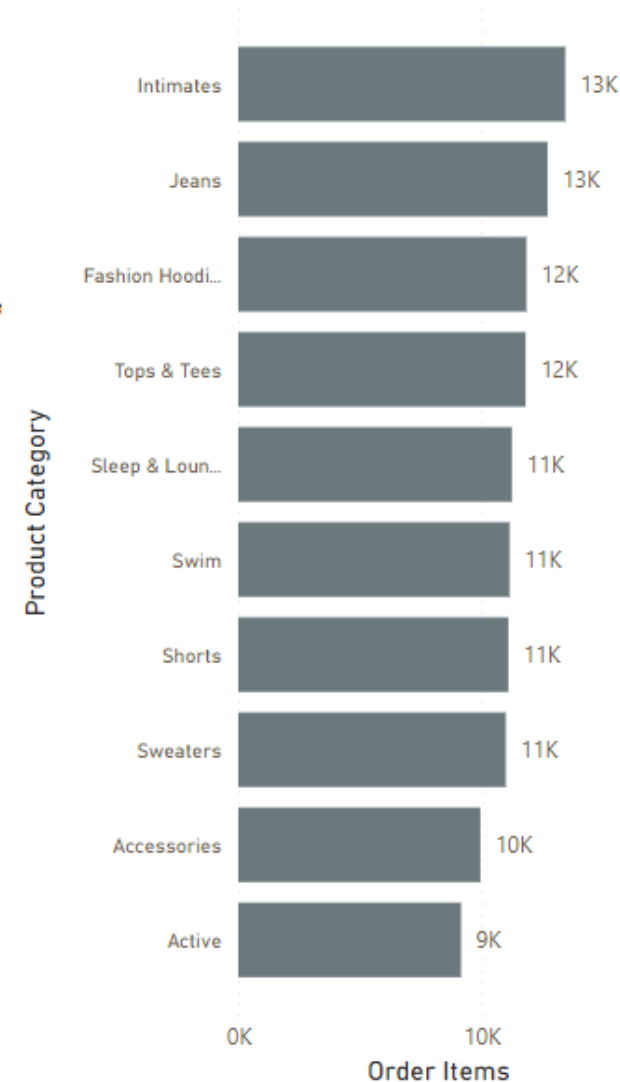
$11M
Total sales

100K
Unique Customers

125K
Total orders

181K
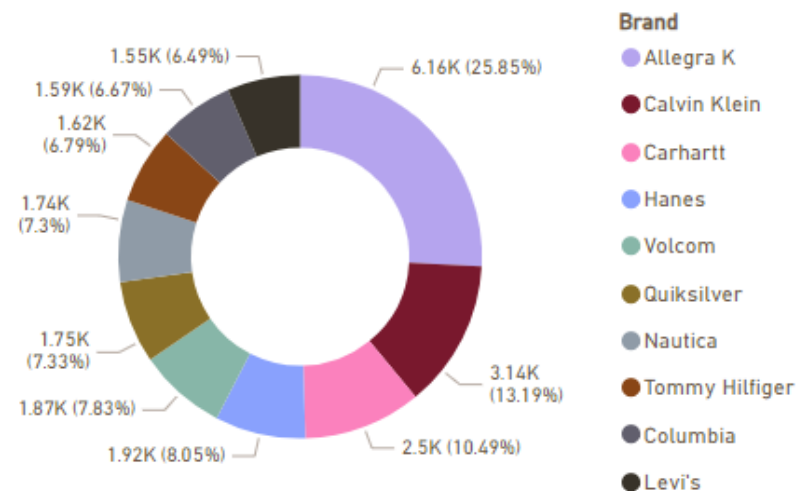Total number of items ordered

Total Sales and Avg. Sale Price by Year

● Total Sales ● Avg. Sale Price

Total Sales: $4M, $2M, $0M

Avg. Sale Price: $61, $60, $59

2019, 2020, 2021, 2022, 2023, 2024

Top Ordered Items by Category

Product Category:
- Intimates — 13K
- Jeans — 13K
- Fashion Hoodi... — 12K
- Tops & Tees — 12K
- Sleep & Loun... — 11K
- Swim — 11K
- Shorts — 11K
- Sweaters — 11K
- Accessories — 10K
- Active — 9K

Order Items: 0K, 10K

Top Ordered Items by Traffic Source
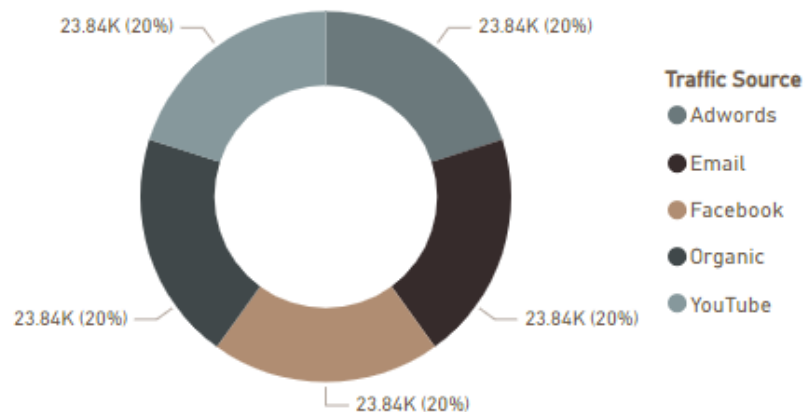
23.84K (20%)
23.84K (20%)
23.84K (20%)
23.84K (20%)
23.84K (20%)

Traffic Source
- ● Adwords
- ● Email
- ● Facebook
- ● Organic
- ● YouTube

Top Ordered Items by Brand

6.16K (25.85%)
1.55K (6.49%)
1.59K (6.67%)
1.62K (6.79%)
1.74K (7.3%)
1.75K (7.33%)
1.87K (7.83%)
1.92K (8.05%)
2.5K (10.49%)
3.14K (13.19%)

Brand
- ● Allegra K
- ● Calvin Klein
- ● Carhartt
- ● Hanes
- ● Volcom
- ● Quiksilver
- ● Nautica
- ● Tommy Hilfiger
- ● Columbia
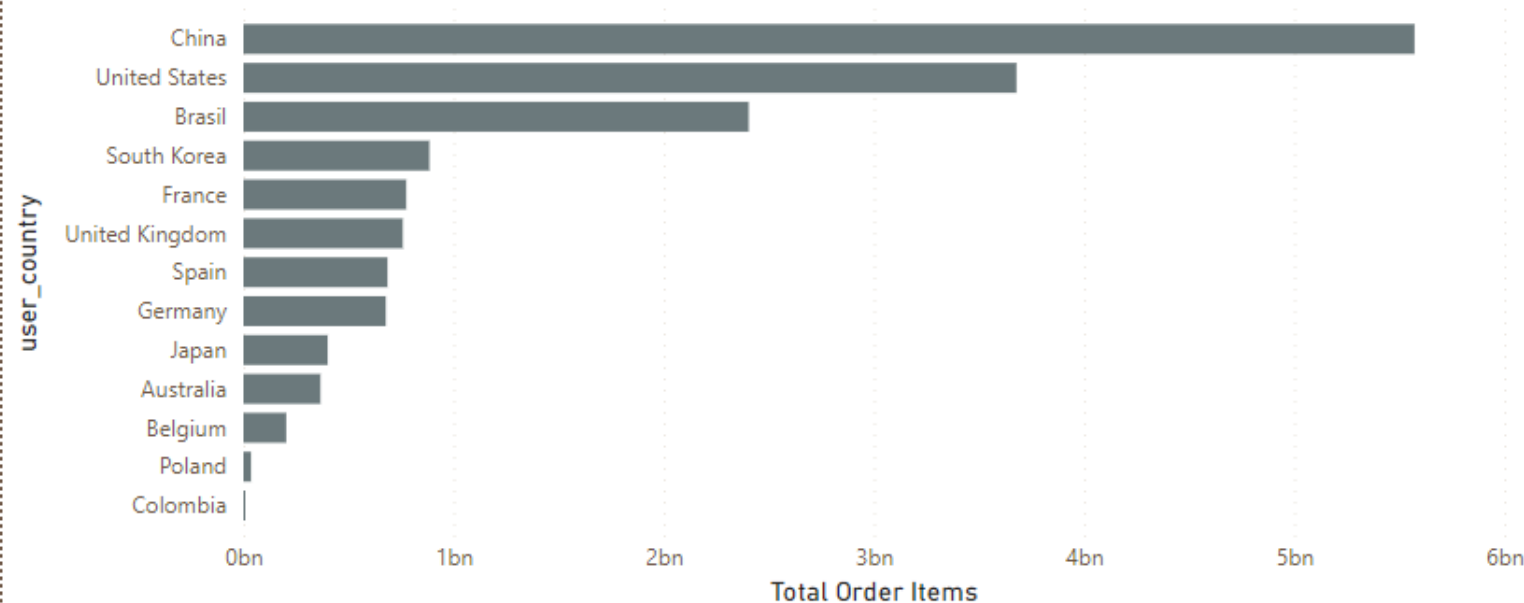- ● Levi's
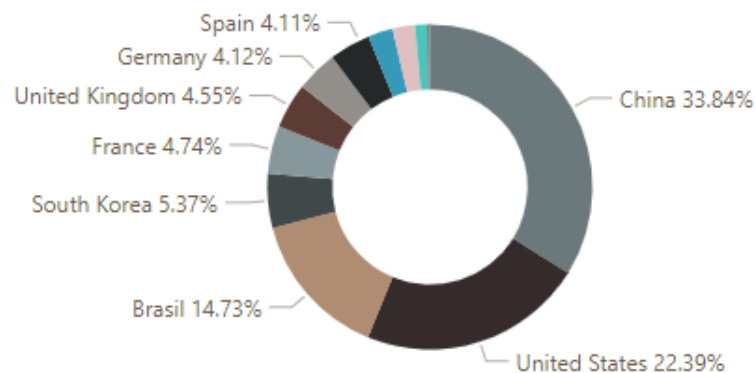
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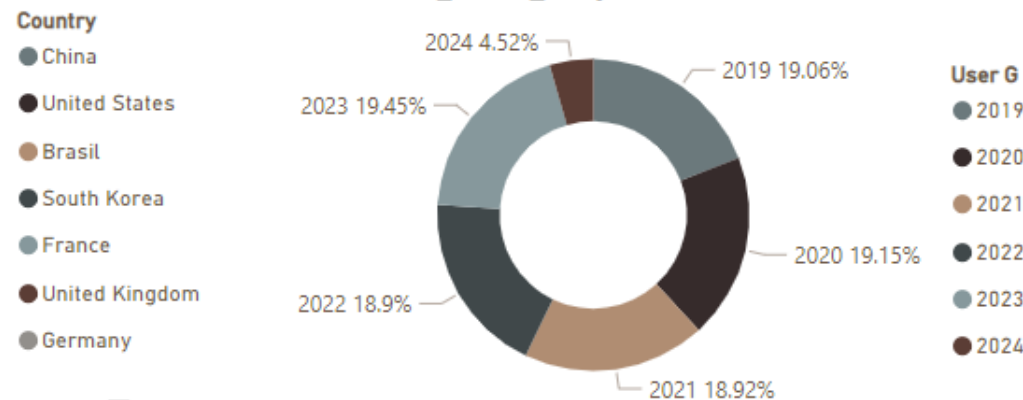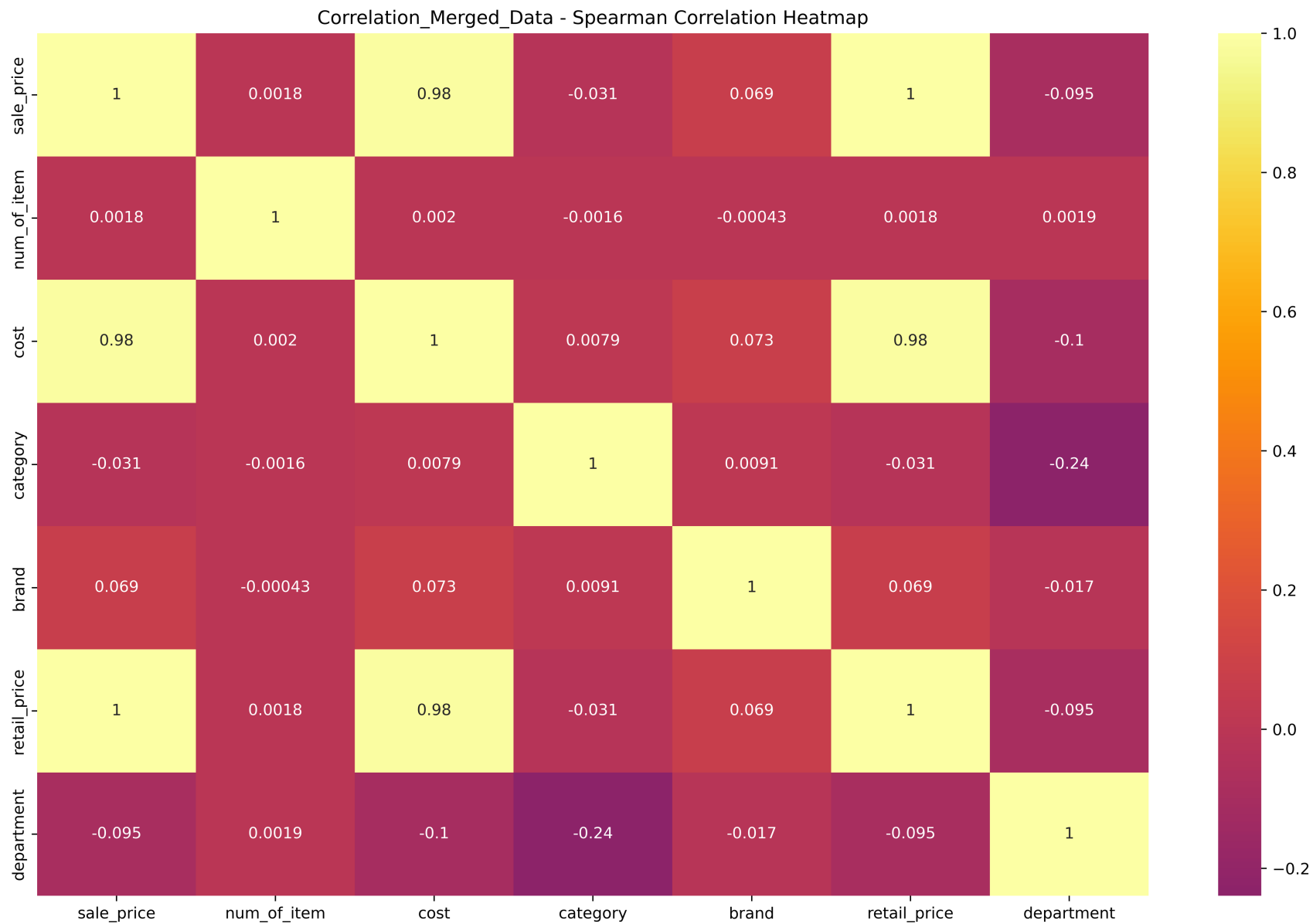Total number of items ordered

Total Order Items by user_country

Country	Given Name	Total Sale Price	Total Number of Order
China	Michael	$87,123.77	1350
China	John	$65,564.87	999
United States	Michael	$63,263.70	987
China	James	$59,931.17	897
China	David	$59,116.34	901
China	Christopher	$56,268.45	863
China	Robert	$49,554.86	789
China	Jennifer	$48,021.82	875
China	William	$40,312.76	617
China	Matthew	$38,964.04	614
United States	John	$38,244.10	633
United States	James	$37,574.34	571
United States	David	$37,520.62	561
China	Brian	$36,669.85	537
Brasil	Michael	$35,043.72	614
China	Joseph	$35,019.61	567
United States	Robert	$34,461.99	576
China	Daniel	$34,134.17	537
China	Michelle	$33,780.01	570
China	Lisa	$33,553.87	603

Total Order Items by Country

Country
- China
- United States
- Brasil
- South Korea
- France
- United Kingdom
- Germany

Count of order_items_id by Year

User G
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

Correlation_Merged_Data - Spearman Correlation Heatmap

- Based on evidence, the company should focus their attention to their biggest markets - China, United States, Brazil and South Korea. Those countries accumulate the biggest order to date. Sales distribution on these areas must be streamlined, lowering down the baseline cost achieving more average order value. As shown, baseline cost can affect retail and sale prices therefore increasing growth and revenue rate in the future.

- Second, focus on top categories and top brands with the highest order items. Those brands has performing very well based on the report. With the categories, the recommendation is to expand the product lines and/or services on these key areas. Ideally over 75% percentile of categories should be considered.

- Streamline distribution on key location and key brands.

- Expand the product line on well-performing categories.

Summary

- Uncover more insights using PowerBI. Create more dashboards wherein you match revenue with other variables. (Breakdown Analysis)
  - Understanding further the user variables. Understanding where users are ordering. Understanding the demographics.
  - Understanding fact tables.
  - Understanding trends and market segments.
- Afterwards, forecasting and regression techniques using Python.

Further Development