

Data Pipeline Report

File: online_retail_customer_churn.csv | Timestamp: 2025-08-23T22:24:22.895071

1. Data Validation Summary

| | |
|----------------------|-----|
| Total Rows | 100 |
| Total Columns | 9 |
| Missing Values Found | 0 |
| Duplicate Rows Found | 0 |

2. Feature Engineering Summary

Columns Dropped: Customer_ID
Columns Created: ReturnRate, PurchaseFrequency, SupportCallRatio

3. Exploratory Data Analysis

Correlation Heatmap



4. Final Processed Data

Shape of Final DataFrame: (100, 11)

Processed DataFrame Head:

| Age | Years_as_Customer | Annual_Income | Total_Spend | Num_of_Purchases | Num_of>Returns | Num_of_Support_Contacts |
|-------|-------------------|---------------|-------------|------------------|----------------|-------------------------|
| 1.38 | -0.47 | -1.51 | -0.09 | -0.99 | 0.67 | 0.73 |
| -1.57 | -0.06 | -1.03 | -1.72 | 0.07 | -1.55 | -0.68 |
| -1.3 | -0.06 | 0.56 | -0.62 | 1.59 | 1.41 | 0.73 |
| 0.71 | 0.35 | 1.53 | 0.78 | -1.74 | -1.92 | 1.43 |
| 0.57 | -0.47 | -0.9 | 0.31 | -0.84 | 0.3 | 0.02 |