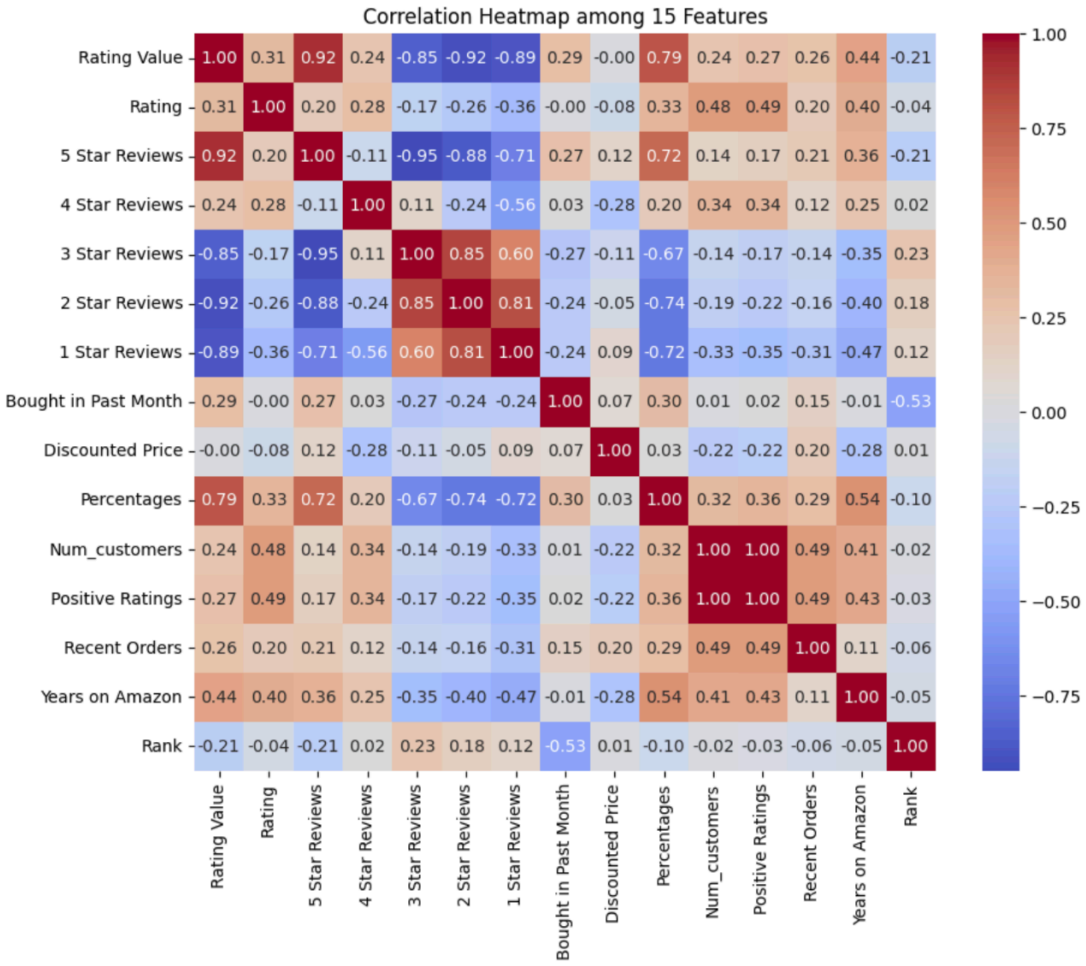


Significant data points:

1. Rating Value
2. 5 star rating
3. 3 star rating
4. 2 star rating
5. 1 star rating
6. Bought past Month

Correlation is a statistical measure that describes the extent to which two variables are linearly related.

Sperman Correlation:

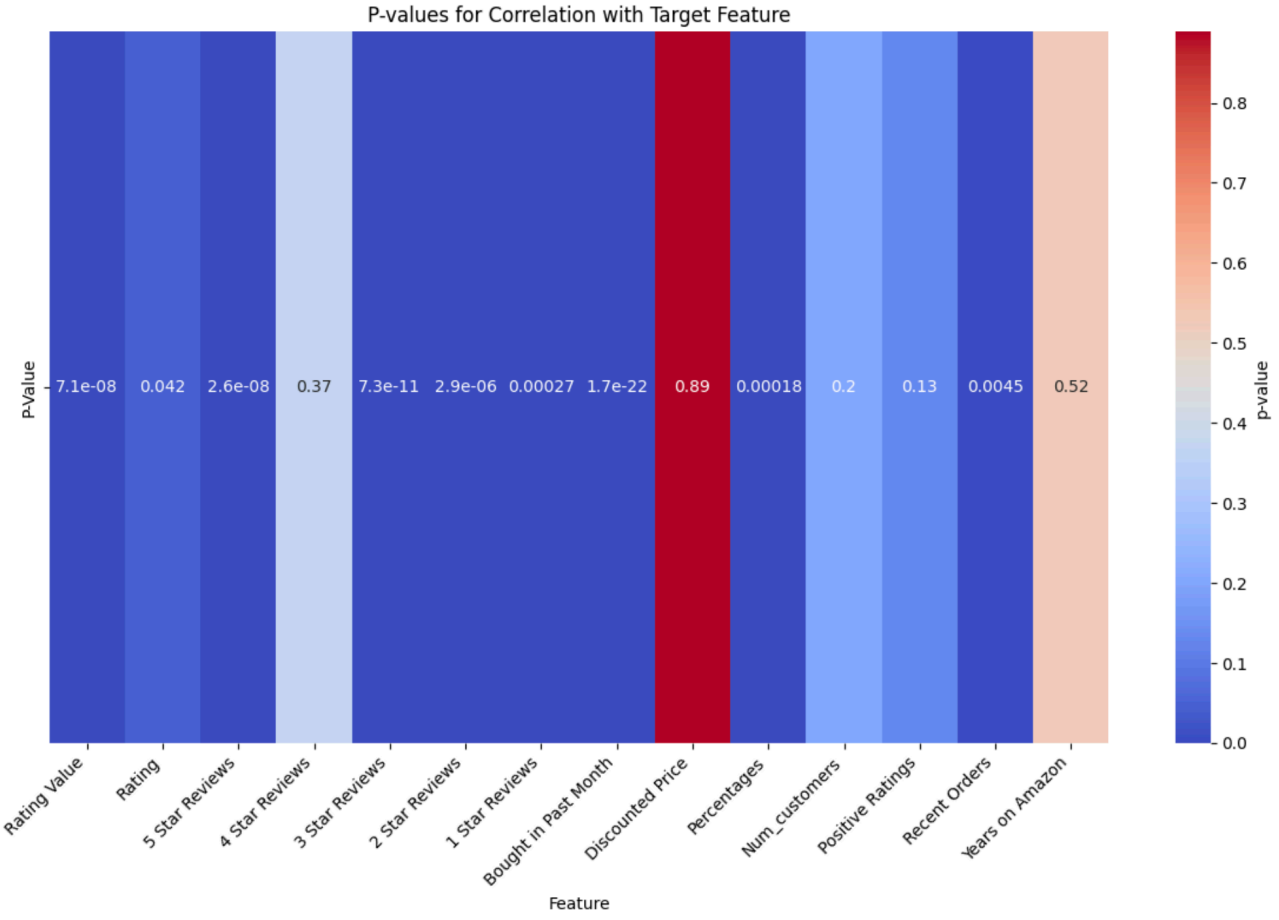
Spearman Correlation with 'Rank':
Rating Value -0.217504
Rating -0.073566
5 Star Reviews -0.226205
4 Star Reviews 0.068440
3 Star Reviews 0.244787
2 Star Reviews 0.197694
1 Star Reviews 0.160787
Bought in Past Month -0.384422
Discounted Price 0.006928
Percentages -0.175178
Num_customers -0.048520
Positive Ratings -0.119506
Recent Orders -0.112193
Years on Amazon -0.075827

-ve value indicate higher the value lower the rank and +ve value indicate lower the value higher the rank.
Value closer to 1 indicate stronger relation whereas value closer to zero indicate weaker relation.

Moderate-Strong(0.3 and above):
1. Bought in Past Month

Low-Moderate(0.2-0.3):
1. Rating Value
2. 5 Star Reviews
3. 3 Star Reviews

Week(below 0.2):
1. Rating
2. 2 Star Reviews
3. 1 Star Reviews
4. Percentages
5. Positive Ratings
6. Recent Orders



Blue represents low p-values, indicating stronger evidence against the null hypothesis (i.e., stronger correlation).
Red represents high p-values, indicating weaker evidence against the null hypothesis (i.e., weaker or no correlation).
Significant Correlations (Low P-values):
1. Rating Value
2. 5 Star Reviews
3. 3 Star Reviews
4. 2 Star Reviews
5. Bought Past Month

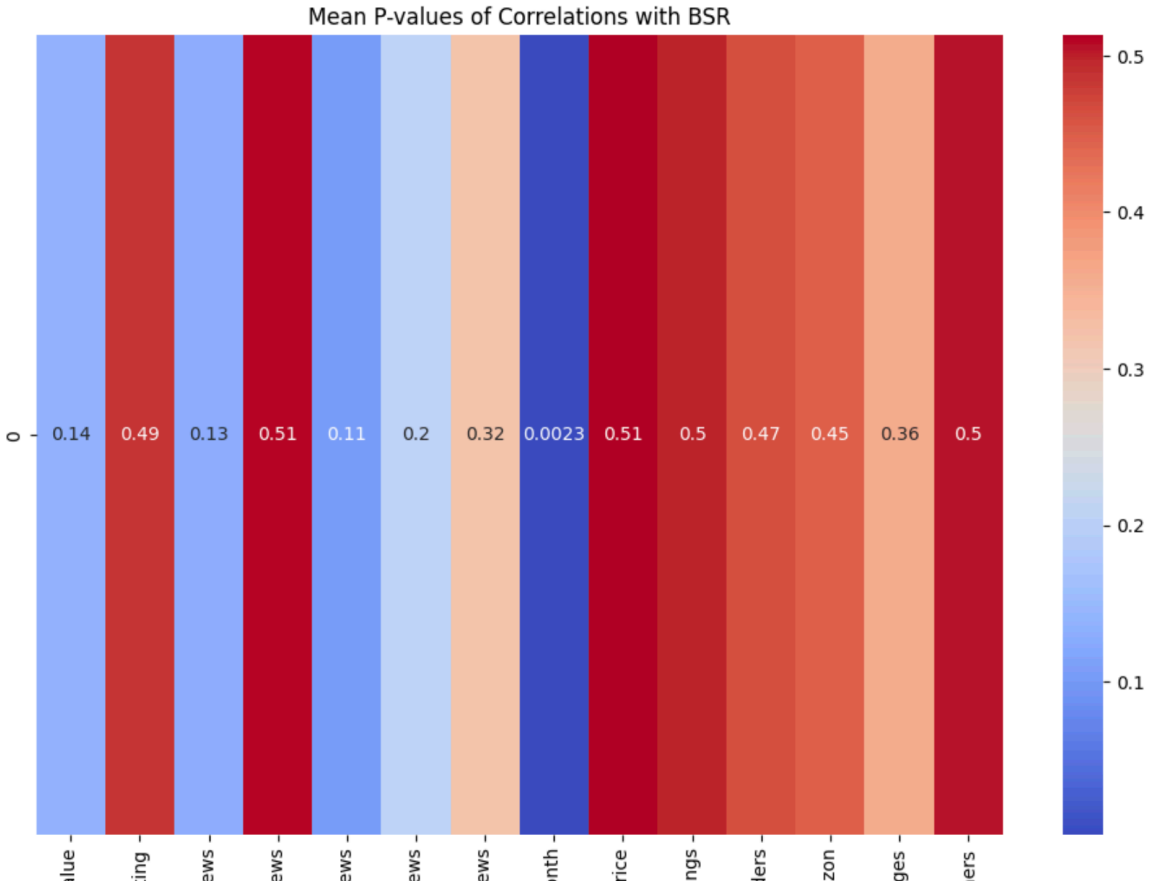
and others with very low p-values (e.g., 7.1e-08, 2.6e-08) indicate strong correlations with the target feature.

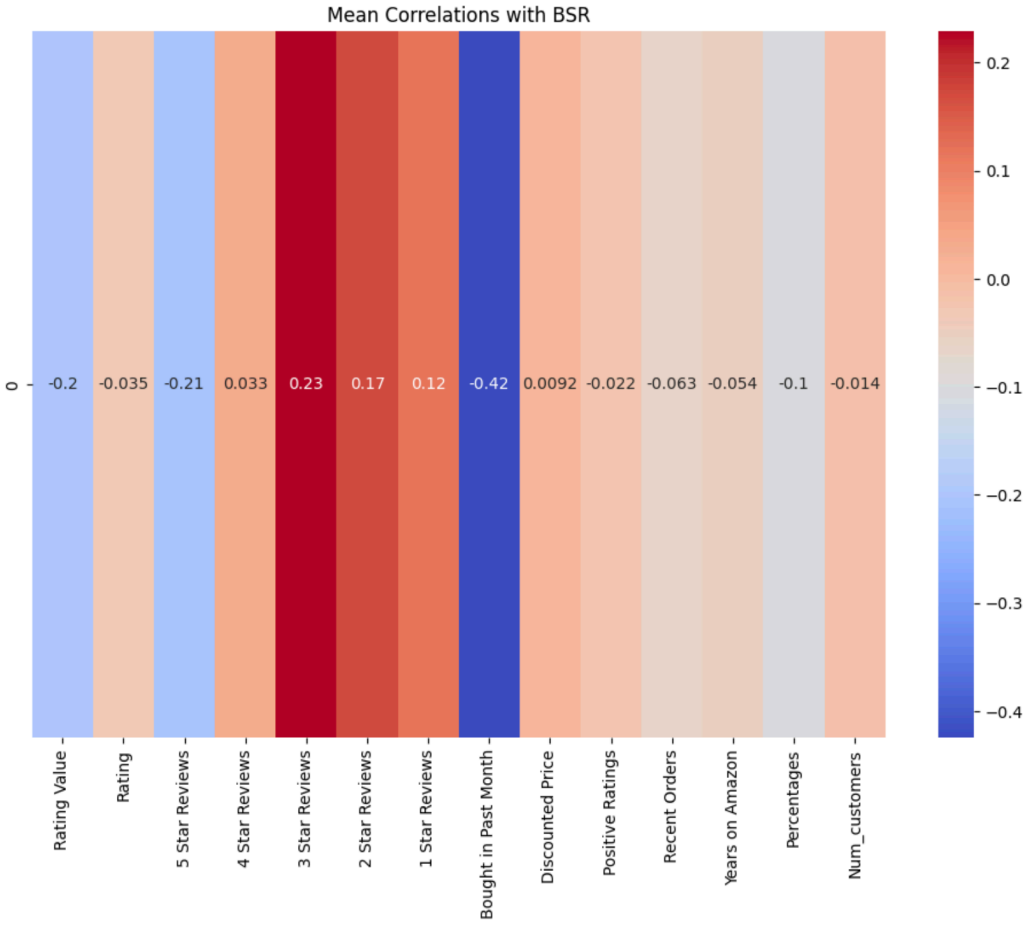
Non-significant Correlations (High P-values): Features like "Discounted Price" (0.89) and "Years on Amazon" (0.52) have high p-values, indicating weak or no significant correlation with the target feature.

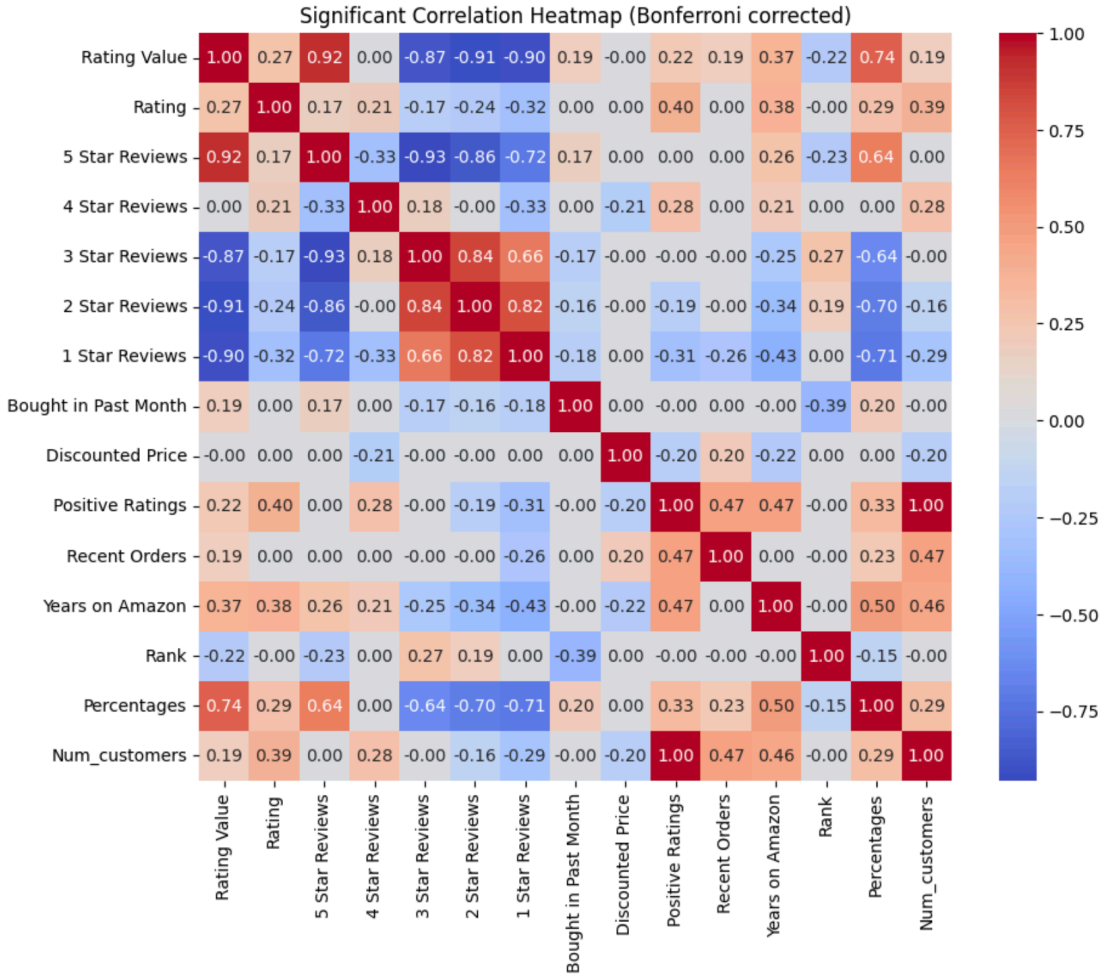
Moderate Correlations:

1. Rating
2. 4 Star Reviews
3. Num_customers
4. Positive Ratings
5. Recent Orders

Features with moderate p-values (e.g., around 0.1 to 0.5) suggest there may be some level of correlation, but it may not be strong enough to be statistically significant.




Mean Correlations with BSR
0
-0.2
-0.035
-0.21
0.033
0.23
0.17
0.12
-0.42
0.0092
-0.022
-0.063
-0.054
-0.1
-0.014
Rating Value
Rating
5 Star Reviews
4 Star Reviews
3 Star Reviews
2 Star Reviews
1 Star Reviews
Bought in Past Month
Discounted Price
Positive Ratings
Recent Orders
Years on Amazon
Percentages
Num_customers
0.2
0.1
0.0
−0.1
−0.2
−0.3
−0.4


Significant Correlation Heatmap (Bonferroni corrected)
Rating Value 1.00 0.27 0.92 0.00 -0.87 -0.91 -0.90 0.19 -0.00 0.22 0.19 0.37 -0.22 0.74 0.19
Rating 0.27 1.00 0.17 0.21 -0.17 -0.24 -0.32 0.00 0.00 0.40 0.00 0.38 -0.00 0.29 0.39
5 Star Reviews 0.92 0.17 1.00 -0.33 -0.93 -0.86 -0.72 0.17 0.00 0.00 0.00 0.26 -0.23 0.64 0.00
4 Star Reviews 0.00 0.21 -0.33 1.00 0.18 -0.00 -0.33 0.00 -0.21 0.28 0.00 0.21 0.00 0.00 0.28
3 Star Reviews -0.87 -0.17 -0.93 0.18 1.00 0.84 0.66 -0.17 -0.00 -0.00 -0.00 -0.25 0.27 -0.64 -0.00
2 Star Reviews -0.91 -0.24 -0.86 -0.00 0.84 1.00 0.82 -0.16 -0.00 -0.19 -0.00 -0.34 0.19 -0.70 -0.16
1 Star Reviews -0.90 -0.32 -0.72 -0.33 0.66 0.82 1.00 -0.18 0.00 -0.31 -0.26 -0.43 0.00 -0.71 -0.29
Bought in Past Month 0.19 0.00 0.17 0.00 -0.17 -0.16 -0.18 1.00 0.00 -0.00 0.00 -0.00 -0.39 0.20 -0.00
Discounted Price -0.00 0.00 0.00 -0.21 -0.00 -0.00 0.00 0.00 1.00 -0.20 0.20 -0.22 0.00 0.00 -0.20
Positive Ratings 0.22 0.40 0.00 0.28 -0.00 -0.19 -0.31 -0.00 -0.20 1.00 0.47 0.47 -0.00 0.33 1.00
Recent Orders 0.19 0.00 0.00 0.00 -0.00 -0.00 -0.26 0.00 0.20 0.47 1.00 0.00 -0.00 0.23 0.47
Years on Amazon 0.37 0.38 0.26 0.21 -0.25 -0.34 -0.43 -0.00 -0.22 0.47 0.00 1.00 -0.00 0.50 0.46
Rank -0.22 -0.00 -0.23 0.00 0.27 0.19 0.00 -0.39 0.00 -0.00 -0.00 -0.00 1.00 -0.15 -0.00
Percentages 0.74 0.29 0.64 0.00 -0.64 -0.70 -0.71 0.20 0.00 0.33 0.23 0.50 -0.15 1.00 0.29
Num_customers 0.19 0.39 0.00 0.28 -0.00 -0.16 -0.29 -0.00 -0.20 1.00 0.47 0.46 -0.00 0.29 1.00
Rating Value
Rating
5 Star Reviews
4 Star Reviews
3 Star Reviews
2 Star Reviews
1 Star Reviews
Bought in Past Month
Discounted Price
Positive Ratings
Recent Orders
Years on Amazon
Rank
Percentages
Num_customers
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75

Features/ Relation	Correlation Heatmap	Sperman	P-value	Bootstrapping	Bootstrapping p-values	Bonferroni correlation
Rating Value	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Rating	NO	NO	Weak	NO	NO	NO
5 Star Reviews	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
4 Star Reviews	NO	NO	NO	NO	NO	NO
3 Star Reviews	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
2 Star Reviews	Weak	Weak	Moderate	Weak	Weak	Weak
1 Star Reviews	Weak	Weak	Weak	Weak	Weak	NO
Bought Past Month	Highly	Highly	Highly	Highly	Highly	Highly
Discounted Price	NO	NO	NO	NO	NO	NO
Percentages	Weak	Weak	Weak	Weak	Weak	Weak
Num_customers	NO	NO	NO	NO	NO	NO
Positive Ratings	NO	Weak	Weak	NO	NO	NO
Recent Orders	NO	Weak	Weak	NO	NO	NO
Years On Amazon	NO	NO	NO	NO	NO	NO

Important Features:

High:
1. Bought past month

Moderate:
1. Rating Value
2. 5 star reviews
3. 3 star reviews

Low:
1. 1 star reviews
2. Percentages
3. 2 star reviews

No-significance
1. Years on amazon
2. Num_customers
3. Discounted price
4. 4 star reviews

5. Rating
6. Recent Orders
7. Positive Ratings

```
                            OLS Regression Results
==============================================================================
Dep. Variable:                   Rank   R-squared:                       0.226
Model:                            OLS   Adj. R-squared:                  0.207
Method:                 Least Squares   F-statistic:                     11.91
Date:                Sat, 15 Jun 2024   Prob (F-statistic):           2.02e-24
Time:                        10:38:36   Log-Likelihood:                -2725.2
No. Observations:                 585   AIC:                             5480.
Df Residuals:                     570   BIC:                             5546.
Df Model:                          14
Covariance Type:            nonrobust
==========================================================================================
                             coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------------------
const                   -15.4010    206.514     -0.075      0.941    -421.021     390.219
Rating Value            -33.4709     34.490     -0.970      0.332    -101.215      34.273
Rating                   -0.0001   6.98e-05     -1.987      0.047      -0.000   -1.62e-06
5 Star Reviews            0.7778      1.808      0.430      0.667      -2.773       4.328
4 Star Reviews            0.1489      1.750      0.085      0.932      -3.287       3.585
3 Star Reviews            3.8951      1.959      1.988      0.047       0.048       7.743
2 Star Reviews           -0.5726      2.619     -0.219      0.827      -5.716       4.571
1 Star Reviews           -1.9454      2.018     -0.964      0.335      -5.909       2.018
Bought in Past Month     -0.0017      0.000     -9.531      0.000      -0.002      -0.001
Discounted Price          0.0162      0.007      2.228      0.026       0.002       0.030
Percentages               1.7390      0.792      2.194      0.029       0.182       3.295
Num_customers             0.0018      0.001      2.199      0.028       0.000       0.003
Positive Ratings         -0.0020      0.001     -2.195      0.029      -0.004      -0.000
Recent Orders            -0.0001   5.54e-05     -2.420      0.016      -0.000   -2.53e-05
Years on Amazon           0.2073      0.456      0.455      0.649      -0.688       1.103
==============================================================================
Omnibus:                       25.895   Durbin-Watson:                   0.470
Prob(Omnibus):                  0.000   Jarque-Bera (JB):               12.015
Skew:                           0.106   Prob(JB):                      0.00246
Kurtosis:                       2.331   Cond. No.                     2.57e+07
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 2.57e+07. This might indicate that there are
strong multicollinearity or other numerical problems.
```