**Duffel Bag**

Call:

lm(formula = net\_Sales ~ ., data = kol.PE\_Duffel\_Bag)

Residuals:

Min 1Q Median 3Q Max

-0.947 -0.201 -0.170 0.217 1.875

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 1.06e+00 8.47e-02 12.54 <2e-16 \*\*\*

kohl\_markdown\_price -1.25e-02 1.05e-02 -1.19 0.235

Target\_disc\_perc 2.46e+00 7.36e+00 0.33 0.738

Target\_markdown\_price -5.85e-02 1.09e-01 -0.53 0.593

Target\_pdt\_desc\_length -6.11e-05 8.23e-05 -0.74 0.458

Price\_rat\_amazon\_final\_pr -7.32e-02 3.48e-02 -2.10 0.036 \*

Price\_rat\_target\_reg\_pr -1.62e-02 3.81e-02 -0.43 0.671

Amz\_cal\_avg\_score 4.19e-01 3.50e-01 1.20 0.232

Amz\_Total\_negative\_sent\_score -6.36e-03 1.51e-03 -4.21 3e-05 \*\*\*

Amz\_Not\_User\_Gen\_images 9.16e-04 1.46e-03 0.63 0.530

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.347 on 574 degrees of freedom

Multiple R-squared: 0.0667, Adjusted R-squared: 0.0521

F-statistic: 4.56 on 9 and 574 DF, p-value: 7.99e-06

|  |  |  |
| --- | --- | --- |
| **Variables** | **Beta** | **Expected Change** |
| **kohl\_markdown\_price** | -0.003841 | 0.999841023 |
| **Target\_disc\_perc** | 4.253495 | 4.253495 |
| **Target\_markdown\_price** | -0.060187 | 0.997511799 |
| **Target\_pdt\_desc\_length** | -0.000021 | -0.000021 |
| **Price\_rat\_amazon\_final\_pr** | -0.050878 | -0.050878 |
| **Price\_rat\_target\_reg\_pr** | -0.013009 | -0.013009 |
| **Amz\_cal\_avg\_score** | 0.455243 | 0.455243 |
| **Amz\_Total\_negative\_sent\_score** | -0.007373 | -0.007373 |
| **Amz\_Not\_User\_Gen\_images** | -0.000657 | -0.000657 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| **Expected Y for log Var** | exp((beta)\*log([100+p]/100)) |  |
|  | Percentage Change :p=10 |  |
|  |  |  |
|  |  |  |
| **Price\_Elasticity** | kohl\_markdown\_price | -0.003841 |
|  | Target\_markdown\_price | -0.060187 |

**Pre-modifications over data**

1. It is most preferable to have more data points among all data which helps us providing better fit.
2. We should never force the regression line through the origin without a clear theoretical justification for doing so. It makes our model diagnostics unreliable.

**Pre-modifications over defining variables:**

1. Defining variables should be of identical and independently distributed (property of iid/normality) results in overcoming the problem of multi-collinearity.
2. Reduce as many number of missing cases (values) as possible which it helps in force fitting the data by replacing its value by zero (results in reducing average/means).
3. It is advisable to have more periodical price changes results in establishing better elasticity.

**Conclusions on Model output**

1. As there are no much price changes over weeks, the price is in-elastic.
2. It is recommended to take 10% change in price for later weeks following dynamic pricing.
3. Since F-statistic is enough large, we reject null hypothesis and conclude that sales are having significant relationship among all explanatory variables.