**Back Pack**

Call:

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

Residuals:

Min 1Q Median 3Q Max

-1.587 -0.537 -0.105 0.438 2.360

Coefficients:

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

(Intercept) 1.60416 0.59428 2.70 0.0079 \*\*

kohl\_Regular\_price -0.01073 0.08059 -0.13 0.8943

kohl\_disc\_perc 1.02123 0.37602 2.72 0.0075 \*\*

amazon\_Regular\_price 0.09428 0.04860 1.94 0.0545 .

amazon\_Shipping -0.29177 0.22919 -1.27 0.2052

Target\_disc\_perc -1.91731 1.32536 -1.45 0.1504

kohl\_pdt\_desc\_length -0.00516 0.00118 -4.38 2.4e-05 \*\*\*

TCIN\_var -0.62680 0.35618 -1.76 0.0808 .

Amz\_rating2 0.03292 0.04215 0.78 0.4362

Avg\_sentiment\_score -0.06257 0.10859 -0.58 0.5655

pos\_avg\_wt\_score 0.21347 0.23700 0.90 0.3694

---

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

Residual standard error: 0.779 on 132 degrees of freedom

Multiple R-squared: 0.258, Adjusted R-squared: 0.202

F-statistic: 4.6 on 10 and 132 DF, p-value: 1.31e-05

|  |  |  |
| --- | --- | --- |
|  | **BackPack** |  |
|  |  |  |
| **Variables** | **Beta's** | **Expected Change** |
| kohl\_Regular\_price | -0.01073 | 0.999555955 |
| kohl\_disc\_perc | 1.02123 | 1.02123 |
| amazon\_Regular\_price | 0.09428 | 1.003910127 |
| amazon\_Shipping | -0.29177 | 0.987995492 |
| Target\_disc\_perc | -1.91731 | -1.91731 |
| kohl\_pdt\_desc\_length | -0.00516 | -0.00516 |
| TCIN\_var | -0.6268 | -0.6268 |
| Amz\_rating2 | 0.03292 | 0.03292 |
| Avg\_sentiment\_score | -0.06257 | -0.06257 |
| pos\_avg\_wt\_score | 0.21347 | 0.21347 |
|  |  |  |
|  |  |  |
|  |  |  |
| **Expected Y for log Var** | exp((beta)\*log([100+p]/100)) |  |
|  | Percentage Change :p=10 |  |
|  |  |  |
|  |  |  |
| **Price\_Elasticity** | kohl\_Regular\_price | -0.01073 |
|  | amazon\_Regular\_price | 0.09428 |
|  | amazon\_Shipping | -0.29177 |

**Pre-modifications over data**

1. It is most preferable to have more data points among all data which helps us providing better fit.

**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 except Amazon regular price.
2. It is recommended to take 10% change in price for later weeks following dynamic pricing.
3. Since F-statistic is large, we reject null hypothesis and conclude that sales are having significant relationship among all explanatory variables.